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FINAL DRAFT REPORT

OIL PRICES AND THE CRISES OF DEBT AND UNEMPLOYMENT:

METHODOLOGICAL AND STRUCTURAL ASPECTS

by

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## Preface

The analytical and methodological problems that confront a systematic study of the effects of higher oil prices on the Third World are as immense as they are diverse. They range from the definition of an "economy" to an analysis of the relation of energy needs to human needs to the question of the crisis in the international monetary system. They involve an investigation of the relations of energy, labour-time and money.

The study confronted so many fundamental questions that Part II on methodology turned into an economic theory. Given its breadth, and the limitations of my own knowledge and research, the application of the methods developed to the problem at hand is somewhat uneven and with many loose ends. It tends, moreover, to be qualitative because much of the data needed to apply the concepts developed here remain to be compiled.

Still, I believe that this is a fairly coherent, if rough, sketch of the causes of crisis and methods used to analyse them. This has enabled me to discuss some principles for the restructuring of the international monetary system. I have no illusions that such a system will come about merely because it might offer the promise of more jobs or equality or peace. But it is, I believe, one essential element in achieving jobs and equality and

peace between countries, in particular between the capitalist and Third World countries.

A note about the terms "capitalist" and "Third World" countries: all countries called "market economies" in U.N. terminology are essentially capitalist countries, which together comprise the capitalist economy. I have rejected the terms "developed", "developing", "underdeveloped", etc., because all of them are based on a concept of development that has actually never occurred if we examine the capitalist economy as a whole. They are therefore essentially incorrect. The two categories of countries I have used to analyse the capitalist economy arise from clear economic characteristics of almost all these countries based upon their historical and present economic-political-military relations.

Many of the concepts in this essay were developed in discussions with my friend and colleague Ed Kahn of the Lawrence Berkeley Laboratory. The essay also owes much to the careful, detailed and insightful review of Armand Pereira of the ILO. John Cavanagh of the Institute for Policy Studies and Patricia Capdevielle of Division of Foreign Labor Statistics and Trade, Bureau of Labour Statistics, U.S. Department of Labor, helped with many reference materials. Marjorie Walton typed both drafts. Finally, I would like to thank Jaswant Krishnayya of the Systems Research Institute, Pune, India who helped initiate the proposal that led to this study. I am, of course, entirely responsible

for its contents, some of which were written to the tune of  
"Somewhere Over the Rainbow" on my baby daughter's mobile.

**Part I**

**Introduction**

## Chapter 1

### Oil and the Balance of Payments

The oil importing countries of the Third World import only about 20% of the oil traded. Yet, since 1974 when oil prices increased dramatically, they have had, as a group, enormous deficits in their balance of payments on current account. These deficits have been substantially greater than the increases in their oil import bills. Moreover, they have occurred despite increases in exports amounting to several times the increases in oil import costs. In addition, many oil exporting Third World countries, including those like Mexico and Bolivia which became net oil exporters after 1974, have also suffered large and increasing balance of payments deficits.

In contrast, the United States, Japan, Australia, New Zealand, and the countries of Western Europe which account for about 80% of the oil imports, suffered significant balance of payments deficits in only two years -- 1974 and 1980, which were the first full years following each of the sudden oil price increases. Even during these two years their deficits were substantially lower

than the increases in their oil import bills.

The cumulative oil import bill of the capitalist countries\* between 1974 and 1982 (inclusive) was about \$1.5 trillion. Yet the cumulative deficit on current account for the same years was only 23 billion\*\* In the same period the net cumulative oil import bill of all Third World countries except the major oil exporters was about \$210 billion but the cumulative deficit on current account was about \$530 billion. This is about equal to the cumulative surplus of the major Third World oil exporters of about \$460 billion. The oil import costs for importing Third World counties increased from about \$5 billion in 1973 to about \$67 billion in 1982. The increase of about \$62 billion per year was far less than the increases in their exports which went up almost four told from \$72 billion in 1973 to \$267 billion in 1982.

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\* I will use the following terminology and categories in this essay (the reasons are explained in Chapter 4): the term "capitalist countries" corresponds to the term "industrial countries" used by the International Monetary Fund (IMF)<sup>1/</sup> and comprises: Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom and the United States. The term "Third World" countries refers to all countries classified as "market economies" by U.N. agencies except those among them listed above as capitalist countries. The "major Third World oil exporters" as defined by the IMF are: Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Oman, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. The "other Third World oil exporters" (also according to the IMF) are: Bahrain, Bolivia, People's Republic of Congo, Ecuador, Egypt, Gabon, Malaysia, Mexico, Peru, Syria, Trinidad and Tabago and Tunisia.

\*\* We shall see in Chapter 4 that this was more than offset by and item called "errors and Omissions" in balance of payments accounts.

Table 1 shows the current account deficits for various groups of countries for the period 1973 - 1982. Table 2 shows the data on oil revenues and import costs.

These two facts -- the lack of deficits for capitalist countries as a group, and the immense deficits of the Third World countries as a group\* -- have, of course, been noted. Yet they have not, to my knowledge, been studied together as phenomena in an economy that is undergoing vast structural changes. Much less is there a realization that there might be a causal connection between the two. Indeed, the reciprocal effects of higher oil prices to structural changes even within countries have just begun to receive systematic attention. Therefore, a great many methodological questions are as yet unresolved.\*\*

This essay is devoted to the study of the structural effects of higher oil prices on Third World countries as a group and proposing solutions to some of the methodological difficulties that arise in the course of such a study. Evidently, the changing price of oil is only one of the important factors in the evolution of

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\* The term "Third World countries as a group" in this essay refers to all Third World countries except the major oil exporters mentioned in a previous footnote.

\*\* For instance Jorgenson concluded his recent econometric investigation of the effect of higher oil prices on the productivity of labour in the United States with the following observation: "Conventional methods of economic analysis have been tried and have been found to be inadequate. Clearly a new framework will be required for economic understanding."<sup>2</sup>/

Table 1

Balance of Payments on Current Account  
in billions of U.S. dollars

Country Group	Year	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Cumulative 1974-82
1. Capitalist Countries		18	-14	18	-3	-6	30	-10	-45	-4	11	-23
2. Major Third World Oil Exporters		7	68	35	40	31	3	70	115	71	25	458
3. Other Third World Countries		-12	-37	-47	-32	-30	-39	-58	-84	-102	-97	-526
of which												
(a) net oil exporters		-3	-5	-10	-8	-7	-8	-9	-11	-21	-23	-102
(b) net oil importers		-9	-32	-37	-24	-23	-31	-49	-73	-81	-74	-424

Source: World Economic Outlook, A survey by the staff of the International Monetary Fund (Washington, D.C., International Monetary Fund, 1982), p. 158 and p. 165.

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Table 2

## Oil Trade Revenues and Expenditures

Item	Year	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Cumulative 1974 - 82
1. Average price of oil \$/barrel		3.22	10.49	11.03	11.73	12.82	12.83	19.08	30.91	34.31	33.30	-
2. Major oil exporters' oil revenues, billion \$		35	112	104	126	139	132	201	281	259	224	1,578
3. Other Third World oil exporters' revenue, billion \$		1	3	4	5	5	7	13	23	27	29	116
4. Third World Oil Imports billion \$		5	16	17	21	24	26	39	63	67	67	340
5. Total exports of Third World oil importers		72	97	96	115	138	158	197	244	248	267	

Source: World Economic Outlook, A survey by the staff of the International Monetary Fund, (Washington, D.C., International Monetary Fund, 1982), Tables 12, 19 and 21, Appendix B.

the situation of Third World countries in the capitalist economy.\* The increases in oil prices have intensified some trends -- for instance, increasing indebtedness and multinational corporate investment in the Third World; they have created new ones -- for instance, declining oil use in the capitalist countries even in times of growing gross product. They have, along with other more fundamental factors which were already powerfully at work, contributed to a decline in purchasing power of wages of Third World workers including poor peasants who also work for money wages. Finally, it is one part of the enormous and, in many ways historically unique, economic and military crisis in the world.

The principal purpose of this study is to elucidate the effects of higher oil prices on Third World countries with particular reference to the questions of employment and the satisfaction of human needs. The macroeconomic phenomena of direct concern are therefore the crushing debt burden which is resulting in the out flow of substantial amounts of real resources and the structure of employment and rising unemployment. It will also be necessary to investigate the nature of energy needs, the role that oil plays in Third World countries and how these questions can be related to the macroeconomic phenomena and policy.

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\* The term capitalist economy in this essay refers to the entire ensemble of countries designated as "market economies" by U.N. agencies -- i.e., it is the ensemble of capitalist and Third World countries taken together. See Chapter 3 for theoretical discussion.

The study of each of these areas confronts immense methodological difficulties. We face additional ones when we try to integrate an understanding of each of these into a coherent overall picture. Part II of this essay is an effort to address some basic methodological questions as they relate to energy use, labour-productivity and labour-time and their relation to money and the monetary system on the one hand and to the satisfaction of human needs on the other. Part III then attempts to use the approach to understand the reciprocal, structural aspects of the effect of higher oil prices on employment and human needs. Finally, I discuss a proposal for restructuring the international monetary system as one basic step toward alleviating international inequities, to creating more employment and meeting human needs as well as toward helping prevent what more and more analysts see as an imminent collapse of the international monetary and trading system.<sup>3/</sup>

Notes for Part I

1. World Economic Outlook: A Survey by the Staff of the International Monetary Fund, International Monetary Fund (Washington, D.C., 1982), Appendix B.
2. Dale W. Jorgenson, "Energy Prices and Productivity Growth", in Scandanavian Journal of Economics, vol. 83, no. 2, 1981, p. 177.
3. John J. Fialka, "World Banking Bust: One Plot for a Tragedy in 8 Scenes and 12 Days" in The Wall Street Journal (New York, 1 Nov. 1982), p. 1.

Part II

METHODOLOGICAL QUESTIONS

## Chapter 2

### Oil, Energy and Human Needs

Even though the consumption of oil per person in the Third World is quite modest in most cases, petroleum occupies a very important place in the energy sector of Third World countries as well as in the daily lives of most people. Petroleum is crucial in the following areas:

\*lighting: kerosene is the most common lighting fuel in the Third World, being used by an overwhelming majority of the people. Though the amounts used in the wick lamps are quite small - typically 3 to 5 litres per person per year - lighting constitutes a large proportion of total petroleum use in many Third World countries, e.g., 7% in India and 30% in Nepal,<sup>1/</sup> and is a significant item in the budget of the poor.

\*cooking: kerosene is an important fuel for cooking in urban areas and liquid petroleum gas (LPG) supplies significant proportions of the populations of many large cities.

\*irrigation: agriculture using high yielding seed varieties often requires irrigation which is generally done using diesel sets or electricity. In many countries the areas with widespread use of high yielding seeds have become the principal source of food procurement for the cities.

\*electricity generation: most Third World countries depend on some combination of oil and hydropower for their electricity; through electricity generation, oil becomes essential for industry.

\*transportation: oil is, of course, almost ubiquitous in long distance transport (apart from trains running on coal) and much urban transport as well.

\*industry: the most common uses of oil in industry, apart from direct use as fuel, are for lubricants, and as feedstocks for the production of commodities like plastics and fertilizers.

The methodological difficulties in relating the present use of oil to energy needs and human needs are considerable. It is certainly not just a matter of projecting or even providing for increases in oil use. Such projections are, of course, commonly made as a basis for planning or assessing import requirements. But they are not based on any systematic assessment of the relation of oil use to human needs. Two relatively simple examples will illustrate the point.

Anyone who has lived in or visited a home which has one or two small kerosene wick lamps knows that the lighting needs of the people in that home are not being met -- and this is true of the situation of hundreds of millions of people in the Third World. Yet, merely assuming a desirable level of lighting and assuming a corresponding increase in oil use would be wrong from practically every point of view.

As a practical matter, it would be extremely expensive for people to increase their lighting in this way. Increased income usually has other priorities than increasing lighting by means of wick lamps! Further, substantially increasing kerosene consumption would come up against foreign exchange difficulties at

the macroeconomic level. As a consequence the limited availability of kerosene itself limits the prospect of meeting needs for lighting in this way. Finally, the use of wick lamps is technically one of the most inefficient ways to convert fuel to light: wick lamps have an efficiency of  $\frac{1}{4}$  lumen per thermal watt. Mantle lamps are about 5 times more efficient and electric incandescent lamps are 10 to 20 times more efficient.<sup>2/</sup>

The poor are constrained by circumstances to use the most inefficient means to provide themselves with light. Indeed, per unit of light, it is also the most expensive means. But the smallest mantle lamp now made consumes several times the kerosene of a small wick lamp and thus is unaffordable. And, of course, most people in the Third World do not have an electric connection because they either live in non-electrified areas or cannot afford it on the terms it is available. I have shown elsewhere that it would save energy to provide the poor with electricity for lighting unmetered on a per room basis (as the Tennessee Valley Authority did in the U.S. in the 1930's). This could be done at a cost comparable to or less than that incurred for kerosene today, both from the points of view of the individuals and the oil importing countries.<sup>3/</sup> Finally, this approach would allow the substitution in many countries of imported oil by hydroelectricity, coal and natural gas,\* or in some locations with biogas generated electricity.

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\* Many countries which import oil have large known supplies of natural gas which are either not being used fully or which are even being flared -- e.g. India and Bangladesh.

Thus, relating current oil use for lighting in a socially and technically sound way cannot be done by making projections. It requires a thorough study of the reasons why oil is being used the way it is and an understanding of the circumstances in which alternatives, either as substitutes or complements, might be practical. One such alternative -- providing a connection for a forty watt bulb per room at a modest charge -- could lower the use of energy, substantially decrease oil imports, and go much of the way toward meeting home lighting needs without substantial additional expense! Of course, such a direction requires considerably different priorities for investment than those which are prevalent in most Third World countries today.

A second example illustrates the same principles and extends the discussion to questions of employment. Fuelwood is, as is well known, the most common cooking fuel in the Third World. Most fuelwood use is non-monetised -- i.e., people gather it for their own use. But a significant proportion of fuelwood is also monetised, since many people in urban areas use fuelwood either directly or as charcoal. In India, for instance, monetised fuelwood accounts for about one-fourth of the total use.<sup>4/</sup>

In general, the primary limitation on meeting human needs in this area of energy use is not so much in the lack of fuel, but in the lack of food to be cooked. Energy needs for cooking are directly dependent on the amount and nature of the food to

be cooked. When more food is available, the energy needs also increase.

Rising energy needs do not, however, automatically correspond to an increase in fuel consumption. The need for additional heat for cooking can also be met by increasing the efficiency of fuel use. Since most traditional fuelwood stoves are substantially less efficient than kerosene or LPG stoves, we appear to be in a similar situation to that described above for lighting where substituting one form of energy by another simultaneously can meet human needs and lower energy use at no additional overall cost while producing substantial other social benefits as well. However, a close examination of the problem shows that increasing efficiency by fuel substitution is not the answer applicable to most situations involving fuelwood use.

First, most fuelwood is non-monetised, in contrast to kerosene for lighting. Poor people expend their labour-time to gather it for cooking.\* This is akin to being self-employed, so far as obtaining a supply of energy for cooking is concerned. In situations where unemployment is high and wages are low -- typical for rural areas of the Third World where self-provisioning of fuel is the rule -- substitution of a monetised fuel such as kerosene

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\* There is a widespread notion that fuelwood use is a primary cause of deforestation.<sup>5/</sup> There is, however, no systematic evidence to support this conclusion. In contrast, there is a substantial amount of evidence that commercial timber exploitation and wars on peoples living in forested areas have been among the fundamental causes of deforestation.<sup>6,7,8/</sup>

for a non-monetised fuel is out of the question. Any attempt to force this upon people -- for example, by trying to prevent them from cutting fuelwood -- would result in a worsening of their situation, even though the nominal energy use efficiency might increase.

Attempting to substitute LPG or kerosene for monetised fuelwood might be more feasible -- particularly since the expenditures for fuelwood (or charcoal) equal or often exceed those for LPG or kerosene. This comes up against two quite different obstacles. First, the supply of these (relatively) cheap, efficient fuels being limited, they are used primarily in large cities and, in the case of LPG, primarily by the well-off. (This is similar to the use of electricity for lighting by the well-off, while the poor are constrained to use kerosene.) But even if the supply constraint could be overcome, any widespread substitution of monetised fuelwood by other fuels would be disastrous for millions of the poor, unless full employment policies at wages that meet human needs are already in effect. This is because the gathering and sale of fuelwood is a source of employment and essential money earnings for millions of rural workers who are often among the poorest people. In India, for instance, collecting and selling fuelwood is a primary occupation for between five and ten million people.<sup>9/</sup>

Thus, we see that in the case of cooking fuel there is not the relatively straight forward solution that exists (in principle) in the case of lighting. Even increasing the efficiency of fuelwood use could cause problems by decreasing employment.

Meeting human needs for cooking fuel therefore involves increasing fuelwood supply through village woodlots and afforestation schemes as well as increasing the efficiency of fuelwood use and simultaneously providing more employment to the affected workers. In certain special situations, fuel substitution could also have a role.

One methodological lesson illustrated by these examples is that in analysing energy we must distinguish rigourously between energy demand, energy use, and energy needs. (We shall find this to be true of areas of enquiry other than energy as well.) Energy demand is that part of energy which appears as a commodity in the economic system. Since only those who have the money to corner supplies determine the demand for energy, demand has only a partial and grossly distorted overlap with energy needs. Energy use is energy demand plus the fuel which people collect for their own consumption, which may or may not meet their needs.

When we consider energy needs, we must first of all relate it to the concept of human needs. Energy, except for sunshine and food, is not a need in itself. Rather, it is needed because it can enable the satisfaction of other human needs for warmth, clothing, meaningful and productive work, personal mobility and so on. Therefore, when we speak of "energy needs", it is merely shorthand for "the energy needed to produce and justly distribute the wherewithal to meet human needs." Since neither human needs nor the ways in which we use energy are fixed, there can be no

once and for all determination of energy needs. The two examples above illustrate this generalisation.

The examples and the definitions above also show that energy needs, as distinct from use and demand, must be reckoned in terms of output -- that is, the energy which is actually applied to the task at hand. Whether a particular energy output is a need is determined by the relation of that task to the fulfillment of human needs. Thus energy needs for cooking are measured in the work done on the food. In contrast, energy use and demand are measured in terms of the fuel value of the input.

There are further distinctions between energy needs and energy use. There are human needs that are not met and the corresponding energy needs appear only as (implicit) lacks or absences (as illustrated above in the case of cooking and lighting). Simultaneously, there are the socially wasteful indulgences of the rich as well as the harmful uses to which energy is put -- as in the making and use of weapons of mass destruction -- both of which are contrary to human needs. As a result, analysing energy needs requires understanding the simultaneous existence of penury and prodigality -- the latter all too often protected by instruments of repression and war. Translating energy needs into magnitudes of fuels that would be required to meet them is not a simple empirical matter. It necessarily involves value judgements and interpretation at every step. We must, as a matter of methodological rigour, define the point of view and social

experience from which the assessment is made.

The fundamental importance of this can hardly be over-emphasised. For instance, until a few years ago it was the general practice (with exceptions, of course) to omit fuelwood, dung and fodder from energy accounting. It is still the almost universal practice to omit what is in many countries the largest energy source -- fodder and grazing land for draft animals.\* No peasant doing an energy account would omit these energy sources! Further, when traditional energy sources are monetised, as in the case of fuelwood which is sold or bullocks which are hired out, these are not counted as "commercial" energy sources. The consequences for people in terms of policy formulation can be disastrous. This is evident from the fact that the enormous employment implications of monetised traditional energy sources have not, to my knowledge, been analysed as a part of energy policy formulation. Similarly, the self-employment aspect of self-provisioning, as with fuelwood gathering and many other activities must form an integral part of the study of employment.

We have seen that a systematic attempt to relate higher oil prices to employment and human needs has led us to make a rigorous distinction between energy demand, energy use and energy needs. In particular, the consideration of both monetised and non-monetised traditional sources of energy is essential to under-

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\* In Nepal, as an extreme example, the combined power of the draft animals was, in 1975, about forty times as large as the installed electricity generation capacity.<sup>10/</sup>

standing the place of oil in the energy sector in Third World countries. We have also been led to take into account the non-monetised labour-time which people expend in provisioning themselves with energy. Before we can relate oil and energy to employment and human needs successfully, we need to consider carefully the many methodological questions associated with monetised and non-monetised labour-time, and the relation of both to the production of commodities and utility.

## Chapter 3

### Labour-time and Its Product

The production of utility involves, in general, both monetised and non-monetised labour-time. Further, either category of labour-time may be enhanced by the application of (non-human) energy. In order to investigate the questions of energy, labour-time and human needs systematically, we need to be able to:

- \*relate monetised to non-monetised labour-time;
- \*compare various kinds of labour-time at varying wages;
- \*measure the productivity of labour-time and relate it to utility;
- \*relate the use of energy to labour-time and its product.

An example will clarify the methodological questions we face. The relation of monetised labour-time to food is considerably different in the capitalist countries than it is in the

Third World. In the United States, for instance, the labour-time that goes into food is often almost entirely monetised. Most of the food that is consumed at home is highly processed and a large proportion of the meals is purchased. Money income is therefore essential for survival. In such a case, the relation of labour-time to human needs can be approximately established so far as economic factors are concerned by considering monetised employment and the level of wages as proxies.\* Similarly, the effects of an economic change on the satisfaction of human needs can be roughly assessed by understanding its effects on the level of employment and wages. (Of course, such macroeconomic calculations do not tell us which groups are affected beneficially or adversely by the economic change.)

In contrast, much of the food production in Third World countries is non-monetised as is much of the food processing. Almost all the work associated with food preparation from fetching water and fuelwood to washing dishes is non-monetised. Very few meals are purchased. Similar contrasts apply to much or most of the housing and transportation sectors.

It is clear, therefore, that if our enquiry is to center on human needs, we must consider carefully the relation of monetised to non-monetised labour-time. Put another way, we must understand the relation of commodity production to the production of utility.

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\* A similar situation also exists in Third World cities.

We have arrived in a round-about way at the age old problem of capitalist economics which was first clearly formulated by Adam Smith in his famous essay The Wealth of Nations, and further systematised by Karl Marx in his equally famous essay, Capital. Let us note again the two basic reasons which led us to a re-consideration of utility (or use-value) and exchange-value (or, briefly, value). In attempting to relate labour-time to human needs we found it essential to find systematic ways to relate:

1. monetised and non-monetised labour-time to the production of utility;
2. the use of energy to labour-time and its product.

Both Smith and Marx assumed that the entire amount of labour-time required for the appropriation of the utility of a commodity was embodied in the commodity at the time when it was exchanged for another. On this basis they defined an act of exchange as being characterised by implicitly equal amounts of labour-time. The labour-time considered was only that embodied directly in the commodities being exchanged, including the wear and tear of the tools used to produce them.

Both Smith and Marx realised that some things have utility without being products of human labour. Smith had noted that:

"The things which have the greatest value in use have frequently little or no value in exchange...Nothing is more useful

than water: but it will purchase scarce anything; scarce anything can be had in exchange for it."11/

Similarly, utility could be produced through work without the object becoming a commodity. "Whoever directly satisfies his wants with the produce of his own labour," wrote Marx, "creates, indeed, use-values, but not commodities. In order to produce the latter, he must not only produce use-values, but use-values for others, social use-values."12/

This production of "use-values for others" included (implicitly) all the labour-time required to appropriate the utility of the commodity. A simple example will show that this definition of a commodity, which still constitutes the foundation of economic theory, is too restrictive on a number of counts and cannot bring out adequately the social character either of commodities or of the production of utility.

Consider a shirt embodying five hours of labour-time all of which is monetised. Once this shirt is sold, it must be washed, ironed and repaired, in brief, maintained,\* in order that it may be fully utilised. If the shirt lasts a hundred washes and ironings, each requiring in sum ten minutes, the total maintenance labour-time of almost 17 hours is more than three times the manufacturing time. Further, a richer or more fashion conscious person may throw away the shirt after a few washes while a poorer

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\* Throughout this essay the term "maintenance" includes repairs.

one might expend many more hours darning it so as to extend its utility.

Each one of these cases has macroeconomic implications. As an extreme instance, consider a situation in which shirts are worn only once and then discarded. If people were to be properly clothed, an enormous amount of additional production would be necessary. Thus, by implication, the maintenance of all shirts and the condition in which they are socially acceptable, when considered in sum, directly affect the structure of production. Nor is this example entirely fanciful as can be seen from the production of paper plates, styrofoam cups, etc. in order to minimise dishwashing.

Maintenance labour-time, whether non-monetised or monetised, essentially affects the production of utility and through it the entire structure of production and consumption. The exclusion of maintenance labour-time from the study of exchange is part of a systematic bias in economic theory: the exclusion of non-monetised labour-time, of which other examples have already been cited in the area of production of food and fuel. This is tantamount to excluding almost all the labour-time of children, most of the labour-time of women, and much of the rest of the labour-time in the Third World as well (as for instance in animal husbandry or house construction).

The exchange of commodities is therefore not only a social relation between the parties to the exchange and all those whose

labour-time is already embodied in the commodities, but it creates a whole host of social relations which involve the maintenance of the commodities and their social disposition. Indeed, the social relations involved in maintenance enter into the very exchange of commodities as well. Not only would a commodity requiring less maintenance labour-time be worth more to the buyer, the nature of the buyer's relations with the system of maintenance enters into the exchange. A buyer who washes and irons clothes himself would look upon the exchange relation of purchasing a shirt differently from one whose wife does it for him, particularly as a matter of social division of labour, or from one who takes his clothes to a laundry. Therefore, the same commodity exchanged under different circumstances implies different social and economic relations depending on the economic relations of maintenance. Thus, for instance, the extent and character of women's organisation and the proportion of women who have monetised employment affects the exchange relations of those commodities maintained at home.

Maintenance labour-time can be, and often is, monetised. Most of the above observations apply in this case as well, since maintenance expense is a consideration that enters into an exchange of commodities. The quantitative relation between the two is simpler to demonstrate in this case, since we can assess depreciation of durables by examining relative wages and amounts of labour-time in manufacturing and maintenance.

For a commodity C let:

$M_{ci}$  be the price of the commodity (new) in year  $i$ ,

$L_{ci}$  be the labour-time needed to make the commodity in year  $i$ ,

$p_{ci}$  be the manufacturing charge per unit of labour-time in year  $i$ ,

$p_{mi}$  be the maintenance charge per unit of labour-time in year  $i$ ,

$L_{mi}$  be the maintenance labour-time in year  $i$  of a commodity purchased in year 0,

$r_i$  be the interest rate in year  $i$  at which money is available to purchase the commodity new.

Note that  $p_{mi}$  and  $p_{ci}$  are not wage rates but average charges per unit of labour-time implicit in the price of the commodity. They are calculated by dividing the price by the amount of labour-time involved. Thus  $p_{mi}$  and  $p_{ci}$  include wages, profits, rent, interest, taxes and depreciation, all calculated per unit of labour-time. The proportion of the charge per unit of labour-time that goes to wages will vary from one industry or location to the next and also between manufacturing and maintenance. However, in a given industry and country  $p_{mi}$  and  $p_{ci}$  will tend to have a fairly stable relation of proportionality to wage rates over considerable periods.

In the year  $i$ , the owner of the commodity will spend an amount  $L_{mi} p_{mi}$  for maintenance. When capitalised at the prevalent interest rate  $r_i$ , this yields a sum  $L_{mi} p_{mi}/r_i$  which can be com-

pared to the price  $M_{ci}$  of purchasing the same commodity new in that year. Assuming that the various prices do not fluctuate too rapidly and unpredictably, the owner of the commodity will scrap it in that year in which the maintenance cost exceeds the annual cost of the new commodity (assuming, for simplicity, that maintenance during the first year is included in the price of the new commodity)\*. We can state this in algebraic terms. The owner will scrap the commodity when

$$L_{mi}p_{mi} > M_{ci}r_i \dots \dots (1)$$

$$\text{i.e., } \frac{L_{mi}p_{mi}}{r_i} > M_{ci} \dots \dots (2)$$

By definition, we have

$$M_{ci} = L_{ci}p_{ci} \dots \dots (3)$$

Therefore, the owner will scrap the commodity when

$$\frac{L_{mi}p_{mi}}{r_i} > L_{ci}p_{ci} \dots \dots (4)$$

$$\text{i.e., when } \left( \frac{L_{mi}}{L_{ci}} \right) \left( \frac{p_{mi}}{p_{ci}} \right) > r_i \dots \dots (5)$$

\* This is, of course, not the only factor to enter into calculations of depreciation. Indeed, sometimes political and military factors, called "political risk" by multi-national corporations, dominate in calculations of depreciation over directly economic criteria such as relative wage rates.<sup>13/</sup>

If the ratio of charge per unit of labour-time to wages is the same in the case of manufacturing and maintenance, i.e., if the proportion of prices to wages is the same, then the inequality in (5) reduces to

$$\left( \frac{L_{mi}}{L_{ci}} \right) \left( \frac{w_{mi}}{w_{ci}} \right) > r_i \quad \dots \dots \quad (6)$$

where  $w_{mi}$  and  $w_{ci}$  are the wage rates in maintenance and manufacturing, respectively, in year  $i$ .

Apart from fluctuating interest rates, the basic tendencies in the capitalist countries have been to toward faster depreciation. These include:

- \*the export of manufacturing to relatively low wage areas, particularly in the Third World;
- \*the retention of a large proportion of consumption in relatively high wage areas;
- \*the more rapid automation of manufacturing compared to maintenance.

As a result of these factors the relative charges per unit of maintenance labour-time in the capitalist countries tend to be larger, often considerably so, compared to manufacturing. This difference is further increased by the high cost of spare parts, often rendered higher by frequent design and model changes -- an economic phenomenon which has come to be widely known as "planned obsolescence."

In contrast, equipment that is purchased by Third World countries whose price is dominated by the relatively high charge per unit labour-time prevalent in the capitalist countries will depreciate slower because of the lower maintenance charge per unit of labour-time.\* Thus, the same equipment is depreciated at drastically different rates depending on the relative charges for maintenance and manufacturing labour-time -- or, roughly speaking, the ratio between the average wage rate in manufacturing for that particular commodity, including all steps in its production, to the average wage rate for its maintenance in the place where the commodity is used.

It is easy to verify this hypothesis. Cars, for instance, last several times longer in most Third World countries than they do in capitalist countries. The difference is essentially explained by the differing ratios of maintenance to manufacturing labour-time charges for cars.

The relatively simple case of monetised production and maintenance illustrates that commodity exchange of necessity involves immensely complex economic relations which must be taken into account if we are to understand the specific transaction. We have also seen the power of the method of understanding commodity exchange in this manner in helping to explain such phenomena as depreciation and the division of labour-time in the capitalist

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\*This is, however, not necessarily the case when "political risk" dominates depreciation rates.

economy. However, the quantitative aspect of the method so far relates only to monetised labour-time. We must extend this to include non-monetised labour-time since both are essential to understanding the use of energy and the production of utility. In two examples in the previous chapter, we saw that non-monetised labour-time is not only important in maintenance, but also directly in the production of the articles of utility such as cooking food, fetching water and fuelwood and growing grain.

To develop the method, it is essential to clarify the questions of the productivity of labour-time as it relates to the production of commodities and of utility.

The term productivity of labour-time usually refers to the amount of money generated by a unit of labour-time in a particular activity discounted for inflation. This is supposed to give us a monetary proxy for a physical measure of productivity. Such a measure of productivity is, however, merely a relative measure in which money serves as the measure of output in any particular field of activity in order that different fields of activity may be added. As Kendrick has noted, in measuring productivity "constant prices as of one period must be used to multiply the units of different outputs (and inputs) by in order to combine them into aggregate measures. The ratios may relate to the entire national economy to an individual industry or to a company or other producing organisation."<sup>14/</sup>

The basic, though implicit, premises of these calculations

are that commodities are produced within single countries and that the conditions and wage rates under which any particular commodity is produced are close enough to each other so as to enable the assumption of an approximately homogenous industry. Further, these measures do not relate labour-time for production to that required for maintenance even so far as monetised labour-time is concerned to say nothing of non-monetised labour-time.

These premises make any inference about the physical productivity of labour-time from this approach tenuous at best and, in general, invalid. This does not mean, however, that the numbers are meaningless. A calculation of productivity in terms of money relates to the prices of labour-time, fuels, raw materials, capital, etc.. It enables the owner of the firm\* to calculate how to maximise returns on investment and on each unit of money paid to workers. This is productivity from the point of view of the capitalist. It measures output per unit of labour-time in monetary terms in a specified currency. Algebraically we define it as:

#### Productivity in monetary terms

$$y_m = \frac{\text{amount of sales adjusted for inflation}}{\text{labour-time}} \dots \quad (7)$$

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\*Whether the capitalist is an individual or a corporation makes no difference to the calculation.

By its very nature an aggregate monetary measure of productivity does not admit of meaningful comparisons between areas with very different wage rates or where different currencies are involved. It is also rendered meaningless for particular industries if the ratio of production to maintenance wage rates is very different. A comparison of productivities in monetary terms can only tell us how much the money which corresponds to a unit of labour-time in one place (including rent, interest, and profit) can purchase in another place. It does not give us a comparison of the production in the two places.

In order to relate labour-time to utility we need physical measures of productivity. The simplest such measure would be to calculate the total amount of time needed to produce a particular commodity. This measure does not involve money and can be defined as:

#### Productivity of labour-time

$$y_c = \frac{\text{number of units of a commodity produced}}{\text{total amount of labour-time used to produce them}} \dots \dots (8)$$

In calculating  $y_c$  we must take into account all the time required to produce the raw materials, fuels, components, etc. We must also include the time required to maintain the equipment used in the production of the commodity. When a worker pushes a button or drives a truck it is not he alone who is productive but the

entire ensemble of people who contributed to the process that he activates.

This measure of productivity allows us to compare different methods of producing the same commodity. However, we cannot compare the productivity for different commodities in this way. Further, since the fuels, raw materials, etc. that go to make up a commodity are, in general, not produced in one country, we cannot compare the productivity of labour-time among countries.

Take, for example, a pin (as did Adam Smith). A twentieth century pin might contain iron ore from Mauritania and chrome from Zimbabwe smelted in France, manufactured in West Germany by Turkish immigrant workers with machines from various countries, and fuel from Saudi Arabia and Namibia. It might then be transported in a ship of more diverse make than itself run by Greek sailors, to be sold in the United States. The labels on items which proclaim that they are "made in" a particular country are mere conventional symbols which bear as little resemblance to the world today as the abacus does to the electronic computer (without prejudice to either!).

One of the most important aspects of a physical measure of productivity such as the one defined above is that it enables us to relate labour-time to energy use. The simple measure defined above does not, however, relate labour-time to utility or to any further labour-time needed to obtain the utility from the commodity.

We can calculate the amount of labour-time it takes to produce a unit of utility such as a calorie of cooked food, an hour's wearing of a shirt, a square meter of shelter for one year. This should include all the labour-time it takes to produce that unit of utility, including non-monetised labour-time such as that for gathering fuelwood and grazing cattle as well as maintenance labour-time such as cleaning dishes, washing a shirt, or sweeping floors. We can define this measure algebraically as:

Productivity of labour-time as it relates to utility

$$y_u = \frac{\text{number of units of utility}}{\text{total labour-time needed to produce them}}$$

For instance, if the shirt discussed above is worn each time for ten hours, the total utility would be 1,000 hours of shirt-wearing for a total production labour-time of five hours and maintenance labour-time of about seventeen hours. Thus, the productivity of labour-time in this case is about 45 hours of shirt-wearing per hour of labour-time.

We are now in a position to relate the use of energy to that of labour-time in the social production of utility. To do this we need a method which will show the effectiveness of energy in enhancing human effort.

Energy and time as physical entities have a common property: they are both being constantly degraded -- that is, irretrievably

"used up".\* One economic implication of this fact is that energy and labour-time can be partial substitutes.

The labour-time that it takes to produce sufficient food is generally shorter than the labour-time for which a human being can work. (Marx's theory of surplus-value is based on this observation.<sup>15/</sup>) This is because, so far as the mechanical capacity of human beings is concerned, human energy derives from a particular kind of stored solar energy -- food. In this respect it is the same as the mechanical capacity of domestic animals. It is also similar to non-living sources of energy such as oil, coal or hydropower considered together with the machines required to convert them to mechanical work.

In analogy with the human capacity to work for longer hours than it takes to produce the food to sustain one, the amount of energy expended in producing fuels and the machines required to convert them to work is generally less than the (mechanical) work that can be derived from them. There is thus a basis in thermodynamic reality for the partial substitutability of labour-time and fuels -- energy can enhance the productivity of labour-time in both the physical definitions discussed above. Our method of relating the two must reveal this.

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\*Throughout this essay I use the term energy in the sense of "capacity to do work". More precisely speaking, entropy (a measure of randomness) is constantly increasing as energy and time are "used up". This applies, as do all "laws" of physics, only on time-scales small compared to the "life" of the universe.

The mechanical is, of course, only one aspect of human time. Because we live and are conscious, aware of life, of death, we have desires for the future which are in turn conditioned by our (past) experience. In other words, human time is not only unidirectional from the past to the future, it is also bidirectional. We bring our past and future continually into our present consciousness. Human work has purpose.

It is well recognised that the division of labour which industrialism entails means that the immediate purpose of the worker's work is not related to the thing he produces, but rather to the wage, which can then be related to the necessities of life. Likewise for the capitalist what matters is not so much the physical properties of energy, labour-time, raw materials, etc., but the prices at which he can purchase them. As a result he does not automatically employ fuel powered machinery as Marx's theory of surplus-value would suggest. It is common, for instance, to see women cutting stones manually and carrying sand on their heads side by side with diesel powered cement mixers and cranes building dams that will power huge automated industries such as aluminium smelting which employ very few people. This aspect of the relation of prices to labour-time will be discussed in detail in the next chapter. What we seek here is not only the relation of labour-time to energy, but also a measure which shows how the control of energy using equipment enables control over labour-time.

The first aspect, the enhancement of human effort by energy

is in principle, relatively simple to deal with. We do this by considering energy in terms of energy output or work equivalent.\* To develop measures of the control of energy or labour-time, we will have to relate both to a measure of accumulated investment in the economy. We can do this for the production of utility and also develop parallel measures for commodity exchange.

Besides the monetised and non-monetised labour-time which it takes to produce utility we must consider yet another variety of labour-time: that which it takes to purchase the monetised portions of the labour-time which go into the production of utility. Because of vast differences in earnings per unit of labour-time, it is essential to examine this aspect to understand the pattern of consumption and the vast disjunction between it and the expenditure of human effort to produce that which is consumed.

Let

$t_m$  be the monetised portion of the labour-time for the production of a unit of utility, including monetised maintenance time;

$t_n$  be the non-monetised portion of the labour-time for the production of a unit of utility;

$t_e$  be the labour-time required for the consumer to earn enough to pay for the monetised portion of the unit of utility;

$w_u$  be the total energy output applied to the production of a unit of utility:

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\*In technical terms this means that we convert each energy input to a work equivalent by multiplying it by an 'ideal' efficiency calculated by the use of the second law of thermodynamics.16/

$t_o$  be the total time for which energy operated devices operate to produce a unit of utility.

The total social labour-time,  $t_u$ , which it takes to produce a unit of utility is the sum of the monetised and non-monetised portions of labour-time. Algebraically:

$$t_u = t_m + t_n \dots \dots (10)$$

Note that  $t_u$  is the inverse of  $y_u$ , the productivity of labour-time as it relates to utility, defined above in equation (9).

As distinct from this, the total labour-time which the consuming social unit (whether this be an individual or a family or a commune) puts in,  $t_i$ , is the sum of the non-monetised labour-time and the time required to earn enough to purchase the monetised portion of the labour-time in the production of a unit of utility. Thus:

$$t_i = t_e + t_n \dots \dots (11)$$

If the average price charged for the monetised portion  $t_m$  is equal to the wage of the consumer,  $t_i$  will equal  $t_u$ . In general, however, the two times can be very different. This difference assumes greater importance when the non-monetised portion  $t_n$  of the labour-time is small compared to either  $t_m$  or  $t_e$ . We can define a social inequality ratio,  $e_u$ , as the ratio of social production labour-time for the unit of utility to the consumer's labour-time.

$$e_u = \frac{t_u}{t_i} = \frac{t_m + t_n}{t_e + t_n} \dots \dots (12)$$

This gives us a measure of the relative position of the consumers with respect to the producers of utility. However, it says nothing about social relations within a consuming unit such as a family. If the non-monetised labour-time is zero,  $e_u$  reduces to the ratio of the price per unit of labour-time charged by the seller of the unit of utility to the wage rate of the consumer.

We can use the same approach to study commodity exchange. In this case, we omit non-monetised labour-time and narrow the scope of monetised labour-time to each specific commodity exchange. Thus monetised maintenance would be considered as a distinct commodity exchange. (In contrast, when considering utility it is, in general, essential to consider several monetised transactions as well as non-monetised labour-time for each specific case.)

The ratio of (monetised) labour-time per commodity,  $t_e$ , to the labour-time a specific person must work to buy it,  $t_b$ , defines a commodity exchange inequality ratio  $e_c$ :

$$e_c = t_c/t_b \dots \dots (13)$$

Note that  $t_c$  is the inverse of  $y_c$ , the productivity of labour-time as it relates to commodities, defined above in equation (8). This approach to commodity exchange is particularly useful in studying trade relations as we shall see in the next chapter.

Using the same definitions of labour-time, we can also develop

measures which express the role of energy in the production of commodities and of utility. Consider first the latter. The average power,  $h_o$ , which goes into the production of utility is simply the mechanical work equivalent  $w_u$  divided by the total time,  $t_o$ , for which the energy operated devices run.\* That is:

$$h_o = \frac{w_u}{t_o} \dots \quad (14)$$

However, this measure does not give us an indication of the economic effectiveness of energy use, though it is an indirect indicator of the accumulated investment that goes into the production of utility.

A combined measure of accumulated investment and economic effectiveness of energy use can be obtained by relating the energy output  $w_u$  to the labour-time involved in the production and purchase of a unit of utility or of a commodity.  $h_o$  defined above is a physical measure of average power, since it involves the time  $t_o$  for which machines operate. Similarly, we can obtain an economic measure of average power,  $h_u$ , which relates to social effort by dividing the work output  $w_u$  by the labour-time  $t_u$  which it takes to produce a unit of utility. Thus

$$h_u = \frac{w_u}{t_u} = \frac{w_u}{t_m + t_n} \dots \quad (15)$$

The equation can be recast in terms of the utility productivity

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\*Chemical energy, as for instance in electrolysis or iron ore reduction is also included in mechanical work equivalent through the application of the second law of thermodynamics.

$y_u$  which is the inverse of  $t_u$

$$h_u = w_u y_u \quad \dots \dots \quad (16)$$

Similarly, the average power experienced by the consumer,  $h_i$ , is given by:

$$h_i = \frac{w_u}{t_i} = \frac{w_u}{t_e + t_n} \quad \dots \dots \quad (17)$$

We note that the ratio of the average power as experienced by the consumer to that experienced by the producer is the same as the social inequality ratio defined in equation (12) above.

Parallel expressions can be written for commodity exchange. If  $w_c$  is the work output and  $t_c$  the labour-time for the production of a commodity, the corresponding economic measure of average power is given by

$$h_c = \frac{w_c}{t_c} = w_c y_c \quad \dots \dots \quad (18)$$

where  $y_c$  is the commodity productivity of labour-time defined in equation (8) above.

Similarly, from the buyer's point of view the average power is:

$$h_b = \frac{w_c}{t_b} \quad \dots \dots \quad (19)$$

The ratio of  $h_b$  to  $h_c$  is identical to the commodity exchange inequality ratio  $e_c$  of equation (13) above.

This rather broad-brush investigation of productivity has enabled us to systematically investigate commodity exchange, the production of utility and to develop measures of investment as it relates to the economic effectiveness of energy use. One of the premises that underlies the development of the method is that we assess productivity of labour-time by adding arithmetic-ally the various amounts of labour-time that go into each step of commodity or utility production without adjustment for wages, or intermediation of money or any other factor.

This premise may seem self-evident. Its implications for the study of economics in general, and of the topic at hand in particular, are, however, far from obvious, as we shall see. Therefore, I shall try to outline its basis in the structure of the economy. In this way the methodological premise will be seen not merely to be valid as one of many approaches to the study of a subject, but as essential to a sound and consistent understanding of it.

The premise has been to add units of labour-time arithmetic-ally. This means that each unit of labour-time is added on an equal basis with every other unit of labour-time.

Let us recapitulate the methodological problems which led us to reject the usual method of adding labour-times in monetary terms as unsatisfactory. First, we have seen that even in the case of commodities with entirely monetised labour-time, commodity exchange usually involves both non-monetised and monetised main-

tenance labour-time, if implicitly. Second, as discussed above, both monetised and non-monetised labour-time enter into the production of utility. so that the addition of monetised labour-times above was not sufficient to understand the macroeconomic picture as it relates to human needs. Third, we need to consider the non-monetised labour-time involved in self-provisioning. Forth, using money as a proxy for labour-time has implicit in it the assumptions that wages are directly proportional to labour-time and that the same relation of proportionality applies to the same type of labour-time everywhere -- assumptions which are factually incorrect. Fifth, adding monetised labour-time makes the implicit assumption that different currencies are comparable on the basis of a single exchange rate -- also an invalid assumption, as we shall see.

Having found money an unsatisfactory medium to compare labour-time in general, we resorted to adding it directly. This idea is, as is well known, an old one in economic theory -- espoused by both Smith and Marx, both of whom found labour-time to be the basis for the exchange-value of a commodity. However, both theories in practice limit themselves to monetised labour-time, assuming an algebraic relation between money, which is assumed to be the nominal repository of value, and labour-time, its real measure. Therefore, the application of their theories has in practice been reduced to considering money as a proxy for labour-time -- which raises the objections enumerated above.

One common rationalisation given for the use of money as a proxy for labour-time in spite of some of these difficulties (as they relate to monetised labour-time) is that higher wages simply reflect more "productive" and/or more "skilled" labour. I have already discussed the question of productivity at length and shown the flaws in this approach. It cannot explain differences in wage rates because it is manifest that the same kinds of labour-time receive vastly different wages. It is a circular argument which, having defined productivity in monetary terms, would point to the areas with higher wage rates as being the more productive.

The distinction between productivity and skills is usually not made explicit. Productivity relates to the production of a commodity or utility. Skill relates to a particular kind of work. Skill can only be compared when workers do the same work with the same tools. It is meaningless to compare the skill of a rickshaw-puller to that of a lathe operator, paddy transplanter, clerk, bus driver, or cook. Each has his own skills, acquired through various combinations of tradition, work, and other social experience, and sometimes "formal" (monetised) education.\* Finally, the degree of skill is unrelated to the number of people who

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\*The concept of skill can be used to compare the quantities of utility of a particular kind which workers produce using the same tools and materials. A more skilled carpenter is one who produces with the same wood and tools a chair that lasts longer with equal or less maintenance than another carpenter, in comparable time. I am, however, not aware of any theoretical development of this concept along these lines.

possess it -- though that number may influence the price that is paid for it.

That broadcasters of paddy seeds or rickshaw pullers get much lower wages than broadcasters of rock and roll or engineers is a matter of relative position in the economic system, the country they live in, their organisational strength, and so on -- a sum of factors which Ram Manohar Lohia called "political effectiveness".<sup>17/</sup>

The evidence to bear out Lohia's thesis is all around us. For instance, a weaver or potter or auto mechanic or agricultural worker earns a great deal more in the United States than in Guatemala or Pakistan. In the realm of industrial work, Richard Barnet has noted in his book The Lean Years:

"The only requirement imposed by the host country on a firm taking advantage of a free production zone is that it export what it makes there .... [S]ome countries, such as South Korea, offer the possibility of a sixty-hour work week, and Chile even offers to subsidize the payment of wages. (In South Korea a seven-day work week is considered a "patriotic act".)

".... In Malaysia, where the pay is less than \$2 a day, National Semiconductor, a U.S. company, Teledyne; Siemens, Toshiba; and Plessey of Britain have put up plants. In the Philipines, assembly line workers at Bataan receive \$1.50 a day including cost of living allowance. For the same work, according to an American electronics executive quoted in Far Eastern Economic Review, the U.S. cost would be \$7 an hour.

"The product that the export platform countries in the Third World are selling is not merely cheap labor, but highly productive labor. In Singapore...

McGraw Hill produces in one year an encyclopedia that takes five years to produce in the U.S. ... Donald Baerresen, who has studied the assembly plants on the Mexican border, finds that Mexican metal workers are 40 per cent more productive than U.S. workers, electronics workers 10 to 15 per cent more productive, and seamstresses complete 30 per cent more sewing per hour than their U.S. counterparts."18/

Barnet and Müller in their essay on multinational corporations, Global Reach, call the capitalist system of production the "Global Factory".19/ In this "global factory", as indeed in any other economic system, we must add up differing kinds of labour-time for the purpose of economic analysis. The consistent way to do so is to add up the labour-time directly and not through the mediation of money and wages.

The methodological necessity of adding up labour-time to investigate the production of utility, the productivity of labour-time, and other fundamental questions of economics requires a second methodological premise -- that we consider the economic system as a whole -- i.e., that we define it to be the social unit in which all or almost all the resources, including labour-time and energy, which are consumed are also produced and vice versa.

Practically speaking, the executives of multinational corporations recognize this quite well and explicitly. For instance, Jacques Maisonneuve, the president of IBM World Trade Corporation advised his fellow executives thus in 1971:

"For business purposes the boundaries that separate one nation from another are no more real than the equator. They are merely convenient demarcations of ethnic, linguistic, and cultural entities. They do not define business requirements or consumer trends. Once management understands and accepts this world economy, its view of the marketplace -- and its planning -- necessarily expand. The world outside the home country is no longer viewed as a series of disconnected customers and prospects for its products, but as an extension of a single market."<sup>20/</sup>

Maisonrouge's comments indicate that the scope and basic approach of corporate planning extends world-wide, primarily in the capitalist economy.\* As is discussed in the next chapter, this approach has a long history in the real world of capitalism. Yet, as a theoretical matter an "economy" is usually assumed as being defined by a political-military boundary -- i.e. an "economy" is assumed to be geographically coincident with a country. This normally implicit assumption is sometimes explicitly set forth. For instance, the International Monetary Fund defines an economy as a territorial unit over which a political-military authority exercises jurisdiction. The people within this unit are regarded as "residents" who together constitute an "economy" and have "transactions" with "non-residents". These are the "transactions" reported in balance of payment accounts.

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\*His comments on the nature of boundaries are evidently off the mark. Boundaries are political-military lines and, in general, cultures and languages extend across them and co-exist within them.

The legal-political-military nature of this definition is clearly brought out by the following:

"Since territory and economy is defined in terms of economic entities associated with its territory, the scope of an economy is likely to be affected by a change in its territory or in the entities that are associated with it.

"A change in the jurisdiction over a given territory results in a change in the status of any entities associated with that territory from residents to non-residents with respect to the old economy and from non-residents to residents with respect to the new economy."21/

This definition of an "economy" is that of a political-legal-military entity over which a state exercises jurisdiction, so that changes in the extent of an "economy" can happen by mere legal-military jurisdictional changes. Our discussion of the fundamental concepts of economics and our examination of energy and labour-time show that such an approach is inherently defective. In effect, it equates labour-time with money within political-military boundaries and assumes that relations between such "economies" can be adequately understood by monetised trade relations.

In contrast our approach would define three economies (approximately): The Chinese economy -- the only economy which is coincident with a country; the Soviet - East European econo-

my\*; and the capitalist economy, which includes all the capitalist and Third World countries as mentioned in Chapter 1.\*\*

However, countries do have money which mediates a substantial portion of the economic transactions. Thus, we must still address the methodological questions of the relations of labour-time to money, and of various kinds of money to one another.

Before going on to this subject, let us note some difficulties and problems which require further development of this method, but which would take us too far afield in this enquiry. These relate to conditions of work and to past and future labour-time. When conditions of work are dangerous, as in coal mines without proper safety equipment and procedures, or poor as in the sweatshops of Singapore and Taiwan where women lose their eyesight soldering tiny gold wires onto computer chips, it amounts to expropriation of the time of workers beyond direct labour-time. When the environment is polluted or forests wiped out, or when people lose agricultural land to mines and dams, making life

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\*The Soviet-East European economy has had a rapidly growing trade with the capitalist economy in the 1970's, as Andre Gunder Frank has noted,<sup>22/</sup> but overall still qualifies as an economy. Most of its trade is still internal. Its trade with the capitalist economy consists largely of the export of oil and import of grain for cattle feed by the Soviet Union. The former consists of 10% to 15% of its oil production and the latter accounts for 10% to 15% of its meat production.

\*\*A discussion of the terms "capitalist countries" and "Third World countries" is given in Chapter 4.

and work more difficult for those who may not have any direct part in the specific production or consumption process, the accounting becomes problematic. In this field, even more than in the case of production labour-time, it is evident that the monetary approach which treats the past as dead and the future as discountable at a finite interest rate cannot serve as a satisfactory accounting method. Indeed, a single measure that we can deal with on an arithmetic basis may not be sufficient to cover the range of problems involved.

## Chapter 4

### Money and Labour-time

The analysis in the previous chapter shows that money is not a generally satisfactory proxy for labour-time, particularly when studying the production of utility. We have therefore had to rule out the normal practice of relating one kind of labour-time to another through the medium of money. In its place we added labour-times directly in order to measure the labour productivity in commodity as well as utility production.

While this method allows us to consistently relate monetised to non-monetised labour-time and both to energy, it leaves us with the task of interpreting afresh the relation of labour-time to money. This is a straight forward one. The relation is established when some holders of money purchase the labour-time of others who must offer it for sale because they find it difficult or impossible to meet their needs through barter or

self-provisioning and often because they are obliged to pay dues such as rent and taxes in money.

The quantitative relation of money to labour-time is that of the wage rate in monetary terms. That is all. We make no more implicit or explicit assumptions about the level of wages and its relation to productivity or skills or anything else. We also drop the restriction in Marx's theory of surplus-value that the "price of labour-power rises occasionally above its value, but never sinks below it", the "value of labour-power being determined by "the value of the necessaries of life habitually required by the labourer."<sup>23/</sup> In other words, we make no assumptions about the quantity of commodities that a particular worker produces or which his wage can purchase.

Both methodological and factual considerations dictate that we drop all assumptions about the wage rate either to the work done or to the "value of necessaries" required by the worker. As to the relation to the work done, we have already noted that the same work is paid vastly different wages in different places within the capitalist economy. Moreover, we cannot understand the differences in wages between different kinds of work in this way. As to Marx's assumption about the relation of wages to the necessities of life for the worker, there are several objections to this. The most evident is factual: today, as throughout the history of capitalism, most of the workers in the capitalist economy suffer terrible privations because of the miserable level

of wages. There are methodological objections as well. In a society in which there is severe inequality, there can be no single definition of "subsistence". The worker's definition of subsistence is, in general, different from that of the capitalist. And in a society where consumerism is a dominant force, wants tend to become unlimited, so that the very notion of subsistence or needs becomes perverted and, indeed, indefinable.\*

Once we drop the assumptions about the relation of wage rates to labour-time, we can then examine empirically what commodities a particular wage can purchase and how much labour-time is embodied in them. We can do this consistently since we add units of labour-time to each other without the mediation of money. This enables us to calculate, as described in the preceding chapter, the labour-time in any particular set of commodities and the labour-time needed for the production of utility.

The monetised portion of the economy is just that -- the portion of the economy in which capitalists purchase labour-time and sell commodities to get profits. Gross National Product and all similar concepts then give us measures of how much labour-time is monetised, at what average price, and the amount

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\*I have discussed this at some length with examples, in my essay Economics and Sociology of Alternate Energy Sources.<sup>24/</sup>

of profit -- i.e., how much of the monetised portion of the economy consists of wages and how much of profit (including rent and interest). Note that taxes can be divided into these categories also through an analysis of government spending.

It might be argued that we could relate the non-monetised portion of the economy to the monetised portion by assuming a money-value for the non-monetised activities. This is, however, not possible for several reasons, of which I cite a few. First, since there is a vast range of wage rates for similar activities, imputing wage rates to non-monetised activity is almost arbitrary. Second, it is methodologically impossible to monetise non-monetised activities. The usual impulse is to impute money-value only to those activities which produce utility like cooking, washing, fetching water and fuelwood, etc. But it is incorrect to limit monetisation in this way.

An examination of the monetised portion of the economy reveals that a great portion of commodity production has no necessary relation to utility. A large proportion of it is even opposed to human needs and exists because of the systematic antagonisms in the world, including those within the capitalist economy itself. The immense production of weapons of mass destruction and the additional expenses on deployment, maintenance and actual use fall into this category. Thus, in the monetised portion of the economy plantation agriculture, restaurant cooking and nuclear bomb production are all added up.

To be consistent, we would have to monetise the corresponding non-monetised activities: kitchen gardening, home cooking and wife beating. I do not think that any reasonable, consistent procedure to do this can be devised.

The monetised portion of the economy relates to commodity production and must be understood as such. The medium of money simply allows the capitalist to purchase labour-time and the worker to purchase some commodities. We can empirically determine the amount of labour-time sold, the amount available for sale but not sold (unemployment) and the wage-rates at which it is sold. We can also determine the amounts of monetised labour-time embodied in various commodities.

Here we confront a fresh methodological difficulty. Recall that commodities are, in general, not made within single countries. Since wages and prices within countries are in the various local currencies, we face the question of how these various currencies can be related to each other.

Nominally the various currencies are related to each other through official exchange rates. In the case of Third World countries, these rates are dominated by considerations relating to trade such as balance of payments, foreign debt, prices of imports and exports, repatriation of profits, etc.. Moreover, some currencies in the capitalist economy are convertible into others, i.e., can purchase other currencies, while others are not. Finally, no single exchange rate applies to the various

kinds of transactions that we must take into account. For instance, in a typical Third World country, the rich often pay heavy premiums to buy commodities which may be subject to import restrictions. So the black market value of the currency of a Third World country can be much lower than the official exchange rate. In contrast, the prices of wage goods such as food or public transport are much lower in most Third World countries compared to the capitalist countries. Therefore, the implicit value of a Third World country's currency on the basis of the prices of wage goods is generally much higher than the official exchange rate.<sup>25/</sup>

Commodity exchange in the capitalist economy has generally been effected with two different kinds of money: one for local transactions and the other for trade across political-military boundaries. Historically, the latter money has been a commodity -- typically gold or silver. This served as a medium of exchange across boundaries because it was, as Vilar ~~was~~ put it, "an object whose substance and weight gave it realisable trading value throughout the world market."<sup>26/</sup> Vilar has also given a cogent description of local money:

"Token or 'fiduciary' money, a token accepted as of a certain value although it is known that it itself could never be sold at the same value. This is of course the case with modern paper money, which has no 'intrinsic value', but is accepted for what it represents.... This is all 'fiduciary' money, because its use as payment is due to the decision

of an institution, and continues as long as the public has confidence in the ability of the issuing authority to cash it (as with a currency 'convertible' into gold), or in the stability of the buying power it represents (if it is not convertible into gold). If its buying power declines, but the money cannot be officially refused, attempts are made to get more of it for all commodities. Prices then rise...."27/

Token money which "cannot be officially refused" is generally issued and given currency within political-military boundaries by the authority of the State. This local character of token money applies to most currencies in circulation today -- in particular, it applies to the currencies of Third World countries. Some token money has, however, also taken on the functions previously filled by commodity money -- that of trade across boundaries and settlement of international accounts. Prime among these has been the U.S. dollar which is also the internal token money of the United States. Moreover, since 1971, when the U.S. renounced the gold convertibility of the dollar, international trade has been carried out with token money not officially guaranteed to be exchanged for any commodity. This is an historically unprecedented situation. Its origins, however, go back to the early nineteenth century.

The use of paper for international trade and the settlement of international accounts began in the nineteenth century with the establishment of British economic and military supremacy.

A great portion of the world was directly under British military control so that British paper could circulate within it as within one political-military boundary. Further, after their victory at Trafalgar in 1805, the British also controlled most major sea trade routes.

The monetary situation expressed the dominant position of the British. When the Bank of England (set up in 1694 by British merchants to make a loan to the king) made its notes fully convertible to gold in 1821, six years after Waterloo, the world monetary system was, in effect, on the British "gold standard"<sup>28/</sup> -- with the paper currency of a single state being internationally considered as the equivalent of gold.

Their dominant position enabled British capitalists to effect fundamental changes in the world economy which set the basic direction which continued into the 1970's. One change was to introduce a systematic global division of labour in the production of single commodities. Prior to the nineteenth century, commodities were largely produced locally and then traded. This was true even when local production structures were dictated by external authority or requirements -- as was the case with gold and silver production in Central and South America.<sup>29,30/</sup> In other words, most trade was in commodities which were not subject to further manufacturing or processing.

Increasingly, the raw materials for manufacture came from outside Europe and manufacturing became concentrated in England

and, later in the nineteenth century, in the other capitalist powers of Europe as well as in European settler colonies, primarily the United States. The colonies and semi-colonies (the latter, like Turkey and China were not formally under European rule, but effectively so) not only supplied raw materials and food, they also became markets for manufactures. They were particularly sought as markets for expansion when domestic markets in the capitalist countries could not absorb the possible production at prices which those who controlled it wanted. These wares were often forced on the colonies, opium being the most notorious example. Some of them, like textiles, destroyed indigenous manufactures and artisanal products.

British capitalists (and after the mid-nineteenth century those of the other powers as well) were also well placed to meet some of the demands of a rapidly growing and better organised worker's movement at home, some of which was inspired by the equalitarian impulses of some of the French revolutionaries. If the mine, the factory and the city gave the workers and artisans the possibility of organising for higher wages, there was the horrendous reality of poverty which sustained those demands and made them militant.\* It is not widely recognised that the level of wages in England at the beginning of

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\*According to Hobsbawm, the period 1815-40 had the most militant workers' struggles in English history.31/

the nineteenth century was at its lowest point in several hundred years and only half the level of the last half of the fifteenth century. (See Figure 1.) The command of the production structure as well as markets across the world enabled British capitalists to maintain profits even as the level of wages in England began to rise. They did this partly by expanding the monetised workforce in the colonies and maintaining low wages there and partly by mechanising -- i.e., by replacing some labour-time by fuels. This pattern, followed by the other capitalist powers, eventually led to the establishment of vast differences in wages between the capitalist powers and the colonies, even as the production structure became ever more integrated.

Relatively high wages and rapidly rising investment in the capitalist countries meant that consumption of commodities -- i.e., that which was produced in the monetised portion of the economy -- became concentrated in the capitalist countries. This was reinforced by the increasing economic distress and frequent famines in the colonies which forced people to offer their labour-time for sale at starvation wages.<sup>32/</sup> For instance, real wages in India were lower in the mid-twentieth century at the end of British rule than they were in the sixteenth century, prior to it.<sup>33/</sup> The rapidly increasing wage differences meant that the prices of finished commodities were determined primarily by the level of wages and profits in the

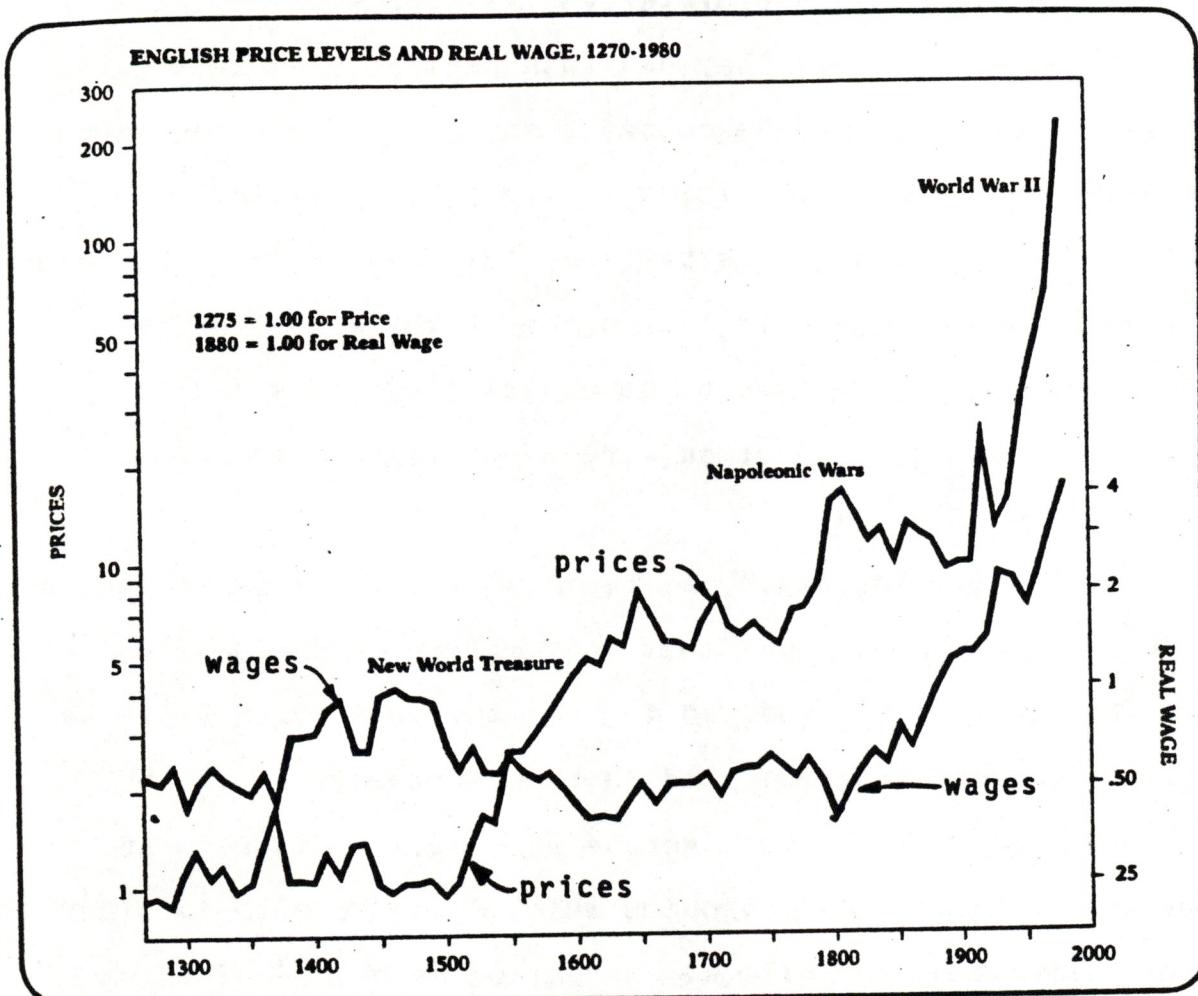


Figure 1: English Price Levels and Real Wage, 1270-1980

Source: Paul A. Samuelson, Economics (New York, McGraw-Hill, 1980), p. 257.

capitalist countries, largely independent of the quantity of colonial labour-time that was involved in their making. At the same time, the monetised portion of the production structure in each Third World country was dominated by export prices.

Since many colonial countries produced agricultural and other raw materials for export under essentially the same conditions, the position of any one of them to determine prices, particularly by raising wages, was very poor, even after they obtained political independence. This was already evident in the case of the Latin American countries which became independent in the nineteenth century. It continued to be true of them and of the Asian and African countries as they became independent in the twentieth.

The maintenance and increase of vast differences in wages in spite of a broadening of the range of monetised and industrial production in the Third World has been one of the most important features of the capitalist economy. For many decades now it has itself become a decisive cause of corporate decisions. It is also a fundamental factor in the present crisis.

Table 3 shows the approximate range of average hourly compensation in manufacturing (1975 data). In the capitalist countries the index ranges from about 40 in Spain to 113 in Sweden, with the U.S.A. average of \$6.35 per hour being taken as 100. On the same scale, the index for Third World countries ranges from a low of 3 for Pakistan to about 30 for Mexico. The differ-

Table 3

Hourly Compensation for Production Workers in Manufacturing

1975

Country	Average hourly earnings in country currency	Additional compensation in country currency <sup>1/</sup>	Total compensation country currency	U.S. dollars <sup>2/</sup>	Index (US =100)
1. Sweden	20.45 krona	9.28	29.73	7.18	113
2. United States	4.83 dollars	1.48	6.35	6.35	100
3. West Germany	9.74 marks	5.46	15.20	6.19	97
4. Italy	1520 lira	1478	3002	4.60	72
5. United Kingdom	1.19 pounds	0.28	1.47	3.27	51
6. Spain	98 pesetas	49	147	2.55	40
7. Mexico	17.91 pesos	5.68	23.59	1.89	30
8. Brazil	7.35 cruzeiros	1.84	9.19	1.13	18
9. Singapore	1.46 dollars	0.36	1.82	0.77	12
10. Taiwan	15.47 dollars	2.71	18.18	0.48	8
11. South Korea	150 won	30	180	0.37	6
12. Pakistan	1.84 rupees	0.23	2.07	0.21	3

Source: "Hourly Compensation Costs for Production Workers in 34 Manufacturing Industries: 32 Countries" (Washington, D.C., U.S. Department of Labor, Bureau of Labour Statistics, April 1982), unpublished data; p. 5.

Notes: 1. Additional compensation includes vacations, bonuses, health insurance, etc..  
2. Converted at average official exchange rate for the year 1975.

ences would be even greater were agricultural wages taken into account.

The large and increasing differences in wages and the fundamental nature of the forces that have brought them about within the capitalist economy is one basic reason for classifying the countries within it into two groups: the capitalist countries and Third World countries. The former were the colonizing powers -- expanding both the land they settled and the populations under their control. The latter were the areas whose internal economic structures were at least partly destroyed and reshaped to suit the requirements of the capitalist classes of the colonizing powers. Thus, while both categories of countries are capitalist countries, with profit and its expansion being the driving economic forces, the internal structures of the two are considerably different -- and often diametrically opposed, for the two groups of countries serve different functions within the capitalist economy for the classes that control it. In the capitalist countries, it is the internal relations that provide the basic impulses for external expansion and have become premised upon it. In the Third World countries the driving forces in the production structure are generally external. In view of this reality, "under-capitalist countries" is a term that describes their situation better than the term "Third World countries". I use the latter only because it is more familiar and not inaccurate since it derives from analogy with

the Third Estate in France in the eighteenth century, which comprised bourgeois as well as workers, peasants and intellectuals in contradistinction to the ruling aristocratic and church hierarchies. In any case, the term "developing" is entirely inappropriate since it implies a process in which social conditions are becoming ameliorated and that the determining forces are internal. Similarly the term "developed countries" is inappropriate to the capitalist countries, since the internal structure of relative prosperity is premised upon the inflow of resources much of it based on low-wage labour-time in the Third World. The term "underdeveloped" becomes meaningless once the term "developed" is rejected for the capitalist countries.

This categorization of countries does not, by any means, preclude other categorizations within the capitalist economy or even within countries. Substantial wage differences exist within countries, for instance. Categorizations can also be made on the basis of class, sex, race or nationality, etc. and these are necessary for certain analytical purposes. The division of the capitalist economy into two categories of countries in this essay has been to show dynamic of the economic relations between countries which have produced a rather peculiar and remarkable result in regard to oil prices, imports, and the balance of payments.

The areas of low wages also tend to be areas with relatively low prices. When the same commodities have vastly different

prices within an economy, this creates opportunities for large profits -- and hence incentives to maintain the differences. Three of the basic means by which they are maintained are:

- \*preventing or controlling labour mobility;
- \*increasing capital mobility;
- \*controlling currency exchange rates.

A simple model will help illustrate the matter.

Consider two economies -- i.e., social units not in economic intercourse with each other -- in which the wage rates are one dollar per hour and one dinar per hour and the price of a shirt one dollar and one dinar respectively. If the economies are then put into intercourse at an exchange rate of 1 dollar = 2 dinars, it pays merchants to buy in the dinar area and sell in the dollar. If, moreover, the movement of capital for dollar holders is easy, eventually manufacturing will tend to shift also so long as relative wages in dinars do not rise. This means preventing effective worker organization and keeping down worker mobility out of the dinar area into the dollar area.\*

While the phenomenon of multinational corporations selling commodities at high premiums in the Third World has been much discussed, the structural importance of the profits arising from

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\*Physical prevention is only one means of keeping down mobility. In general, poverty, language, rules and regulations, social prejudices, etc. are also powerful inhibiting factors.

the exploitation of the price differences in the other direction has been generally overlooked. I illustrate with two examples.

All the tea in the capitalist economy is produced in the Third World, with India and Sri Lanka providing most of the exports. The major trading center continues to be London. The retail price of good quality tea in 1982 in Calcutta was about \$1 per pound. In the United States, the same article retailed for \$5 a pound. Since transport costs are negligible compared to the difference in price, almost all of the difference goes to the various trading and marketing corporations and their creditors outside the exporting countries.

A second example relates to a manufactured commodity. Consider a simple cotton skirt made in the Third World (including fuels, machinery, etc.) and exported to a capitalist country. The export price of the skirt would be typically \$2.00. Its retail price in a place like Bombay would be \$3. The same skirt takes roughly eight hours labour-time, including the time to grow the cotton, weaving in a textile factory, sewing, etc.. The total wages amount to about \$1\*, the other dollar in the export price being profit, rent, interest, and taxes. If the transport, wholesale and retail aspects involve  $\frac{1}{2}$  hour of labour-time at \$6 per hour, this leaves from \$5 to \$15 as profit for

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\*Includes wear and tear of machinery and consequent maintenance.

the various capitalists outside the Third World involved in the transaction. this in turn can serve to purchase a large amount of labour-time in the Third World.

We can calculate the inequality ratios involved in the purchase of such a skirt in various places by different people. In the Third World a worker earning \$1/day would need 24 hours of labour-time to earn enough to pay the price of \$3 for the skirt which took  $8\frac{1}{2}$  hours to make, transport and sell. This yields an inequality ratio  $e_c$  of 0.35. In contrast, a person earning \$5/hour in a capitalist country would require 4 hours of labour-time to purchase the skirt at \$20, giving an inequality ratio of 2.1. A trader earning \$20/hour who can purchase the skirt at \$3 would have an inequality ratio of almost 60 -- i.e., it would take him only one sixtieth the labour-time to purchase the skirt as it took to make, transport and sell it.

Trading profits based on such price differences play an immense role in the capitalist economy. They have not been recognized as such because exports and imports are calculated in terms of their declared "value", i.e., of their prices at the ports of exit or entry, rather than their retail price. Just in the one example of tea it amounts to roughly \$5 billion\*

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\*Of course, a part of the imports are joined with local materials and labour-time before sale, so that this simple calculational procedure cannot be applied to all imports.

There are therefore powerful reasons why multinational corporations, the primary beneficiaries, would want to maintain these large differences in wages and, in many cases, in prices across political-military boundaries though they are not always forthcoming in describing the importance of these boundaries to their profits.

According to Jacques Maisonrouge of IBM, "the critical issue" is the "conceptual conflict between the search for global optimization of resources and the independence of nation-states."<sup>34/</sup> Business International, a consulting firm for multinational corporations, opines that "the nation state is becoming obsolete: tomorrow....it will be in any meaningful sense be dead -- and so will the corporation that remains essentially national."<sup>35/</sup>

As Barnet and Müller have noted, a close reading of these and other such statements shows that what the multinational corporations want is that they "should have freer rein to move goods, capital, and technology around the world without the interference of nation-states."<sup>36/</sup>

This "freedom" for multinational corporations often means gross interference in the affairs of Third World countries, documented in many case studies -- as for example by the North American Congress on Latin America in the case of United Fruit's involvement in the 1954 coup in Guatemala<sup>37/</sup> and by the U.S.

Congress in the case of the involvement of International Telephone and Telegraph in Chile in the early 1970's.<sup>38/</sup>

One of the most notable features of the capitalist economy is the contrary direction of restraints on capital and labour. Capital becomes ever less restrained and more mobile, particularly in the hands of multinational corporations. At the same time, the role of political-military boundaries in restricting workers becomes ever greater. Emigration controls, poverty and a host of other factors prevent workers and peasants from leaving. Simultaneously increasingly severe immigration controls, except against selected professionals, restrict mobility for workers, particularly from the Third World to the capitalist countries. Legally, such mobility is all but impossible today.

In the next chapter we shall see that the third factor cited above -- exchange rates -- has also been crucial in maintaining the wage and (often) price differences between the Third World and the capitalist countries.

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### Part III

#### The Structure of the Crisis

"Of all the barometers capable of revealing to the historian the deeper movements of an economy, monetary phenomena are without doubt the most sensitive. But to look upon them as symptoms only is to do them less than justice: they have been and they are, in their turn, effective causes."

Marc Bloch\*

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\*Marc Bloch, "The Problem of Gold in the Middle Ages", in Land and Work in Mediaeval Europe (London, Routledge, Kegan and Paul, 1967), p. 186.

## Chapter 5

### Oil and the Economic Crisis

The Second World War demonstrated the decisive technical importance of oil. Indeed, so dependent was large scale warfare on it that some have argued that a great portion of the military strategy was itself centered on the control of the oil fields of Eastern Europe, the Soviet Union, the Middle East and Indonesia.<sup>1/</sup> After that war, oil became the most crucial of the resources which the capitalist countries imported from the Third World.

It was not only that the oil was obtained cheap and could be used as a partial substitute for human muscles. Other fuels could also be used for that and were. Oil enabled the further centralization of the control of production system by drastically changing the structure of transportation. In a sense, it did after World War II what coal powered railways had done in

the nineteenth century. Further, cars enabled a different structure of passenger transport -- and held the potential of larger profits than public transport. The technology developed during the war had shown that oil could also serve as the raw material for a vast petrochemical and synthetic materials industry. Finally, oil enabled the transformation of agriculture via tractors, synthetic fertilizers and chemical pesticides.

The vast changes in the structure of production and transport that took place in the capitalist countries are well exemplified by an analysis of the horsepower statistics of the United States, though they began there somewhat earlier.

Tables 4 and 5 show the data on mechanical power and mechanical energy output in the U.S. (corresponding roughly to the category  $w_u$  of Chapter 3).

Most of the four-folding of mechanical energy output is either oil for the transport sector or electricity. This is qualitatively true of most other countries as well. In addition, oil is one of the main sources of fuel for electricity generation in many countries and the principal one in some.

The average social horsepower in the monetised sector can now be roughly estimated by dividing the total non-personal mechanical energy output by the total monetised labour-time. This gives us an indication of the investment in energy consuming equipment in the commodity producing, i.e. the monetised,

Table 4

Installed horsepower in millions -- U.S.A.

Year	Farms	Factories and Mines	Transport except automotive	Automotive transport	Commercial electricity	Residential electricity	Total
1950	165	99	156	4,404	22	22	4,868
1960	240	185	107	10,367	45	63	11,008
1970	290	282	259	19,325	113	139	20,408

Source: Statistical Abstract of the United States: 1980,  
pp. 602 and 616

Note:

1. The horsepower for electricity is that of the generators and not that of the consuming equipment. I have allocated this to the various sectors according to their electricity use. The column "factories and mines" also includes the (fuel driven) prime movers in those locations.

Table 5

Mechanical Power Output -- U.S.A.  
in billions of horsepower-hours and %

Year	Farms	Factories	Production structure subtotal	Non-automotive transport %	Automotive transport structural %	Subtotal structural transport %	Commercial electricity %	Personal including transport %	Total <sup>3</sup>				
1950	40	300	340	30	160	360	520	46	70	6	190	17	1,120
1960	50	620	670	30	110	840	950	42	150	7	480	21	2,250
1970	60	950	1,110	25	260	1,570	1,830	42	420	10	1,010	23	4,370

Notes for Table 5

1. The numbers are calculated using the horsepower data in Table 1, electricity use data and the following assumptions about use rates and average horsepower output of machinery: farm equipment -- average use 800 hours/yr. average horsepower output for animals = installed horsepower and for machines = 25% of installed hp; factories -- average use rate 4,000 hours/yr at 50% of installed hp; trucks -- use rate 1,000 hours/year at 20% of installed hp (most trucks are panel trucks rather than large intercity trucks); non-automotive transport -- 2,000 hours/year at 50% of installed hp; cars -- 400 hours/yr. at 15% of installed hp.
2. 70% of the automotive horsepower is assumed to be in cars. About half the car use is structural -- i.e., either for directly for business or for commuting to work.
3. The total gives us a rough check on the assumptions since this must correspond to about three-fourths the total energy use after accounting for conversion losses. The other one-fourth is mainly space-heating and direct industrial process heat.)

sector.\* For 1970 this figure comes to about 20 horsepower.\*\*

The comparable figure for Nepal would be about 1/3 horsepower -- mostly consisting of draft animals for agriculture.

As noted in the previous chapter, this concentration of energy consuming equipment in the capitalist countries, indicative of growing industrial investment, went with rising real wages in the nineteenth and twentieth centuries. During that period the Third World countries, for the most part colonies, became suppliers of raw materials -- mostly agricultural -- and markets for manufactures.

The concentration of energy consuming machinery in the capitalist countries made it appear that labour-time was more productive there. It was true in many or most cases that, given the raw materials the fuel-powered factories required less labour-time per unit of commodity production.\*\*\* But they were premised on the production of the raw materials -- which in many cases came exclusively from the Third World and settler colonies. Often,

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\*This is different from the average horsepower  $h_c$  defined in equation (18).  $h_c$  is the social horsepower for the production of a specific commodity which requires addition of labour-time and energy use across the boundaries of countries in most cases.

\*\*At 2000 hours per employee per year, the total monetised labour-time in 1970 in the U.S. was about 160 billion hours (78.6 million employed persons). The total non-personal mechanical work was 3360 horsepower-hours. (see Table 5)

\*\*\*This relates only to direct labour-time and does not take into account the substantial losses due to unsafe and unhealthy working conditions as well as environmental pollution.

particularly during economic crisis, the continued economic existence of many factories was premised on the expansion of colonial markets.\*

This combination meant, as is well known, the destruction of colonial manufactures. Thus, as relative wages in the Third World were declining, the proportion of people in non-agricultural work was, in many cases, declining. Thus, while investment and manufacturing became concentrated in the capitalist countries, the overall result in the capitalist economy was not an increase in the proportion of people employed in the non-agricultural sector. Rather, there was a relative shift from the Third World to the capitalist countries.

For instance, the proportion of non-agricultural workers in pre-British India was probably around 40%.<sup>5/</sup> Today it has gone down to 10% in Bangladesh -- once one of the great centers of world manufactures -- 20% in India and 25% in Pakistan. And we must remember that a 20% change on the Indian subcontinent is numerically equal to 100% of England, France and West Germany combined. Similarly Barnet has noted that "the manufacturing sector in Latin America, despite its enormous increase in importance in the total economy there...is employing a slightly smaller percentage of the workforce than it did 50 years ago."<sup>6/</sup> Indeed, the entire manufacturing mining and quarrying sector in the Third

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\*This has been widely documented and discussed. See for instance Hobsbawm<sup>3/</sup> and Luxemburg<sup>4/</sup> for two well known accounts.

World employs only 70 million people or about 10% of the "economically active population."<sup>7/</sup>

Comparing employment statistics over long periods creates serious methodological problems. For instance, most employment in pre-capitalist times was non-monetised. The changes wrought by the capitalist powers in the colonies not only made for wage labour -- it centered the structure of employment and taxation around exports and imports. Moreover, a large proportion of the people who were previously employed in manufactures such as textiles were thrown out of work -- but did not become "economically active" i.e., get monetised employment -- notably tribal peoples displaced from their lands and women.

Roughly speaking though, the evidence allows a qualitative judgement that the proportion of employed workers in non-agricultural pursuits in the capitalist economy has not changed substantially over hundreds of years. Rather a shift has occurred toward an increasing proportion in the capitalist countries and a decreasing and then stagnant proportion in the Third World. While the proportion of agricultural workers (including land-owning peasants) has decreased, the difference is accounted for by an enormous increase in unemployment and underemployment -- which therefore appears to be one of the chief results of capitalist development.

While a decrease in non-monetised work, including house-work, has characterised the course of the capitalist countries,

this has not been the case in the Third World. Rather the "economically active population" -- i.e., monetised labour force stays rather small, typically 30%,<sup>8/</sup> in spite of the fact that a far smaller proportion of people are in educational institutions. Most of the rest are economically active -- but in the non-monetised sectors. This leaves their work unable to purchase a great many necessities in an economy where even land, water and fuel have become monetised. Thus the labour-time of those who do non-monetised work is automatically devalued, so to speak, and so generally is their social situation.

Prior to the Second World War these structural shifts did not seem to presage any crisis in the capitalist countries. Indeed, they were hardly noticed at all -- and, to my knowledge, are not yet recognised as such. The higher wages in the capitalist countries seemed to be based on "higher productivity" and "skills" applied to machinery and fuels. Such attitudes were almost built into these situations since the raw materials were obtained from the colonies so cheap. Moreover, in the nineteenth century most of the fuels and many of the minerals were largely produced within Europe or by the expansion of Europeans into settler colonies in North America, Australia, New Zealand and South Africa.

ca.\* That changed in the twentieth century and dramatically after the Second World War in relation to oil.

Oil was the principal fuel for economic reconstruction in war devastated Europe and Japan, but it was not available in them. Moreover, the United States, the largest producer and an exporter of oil in 1945, soon became an importer as well.

Oil production in the Third World was well under a billion barrels a year at the conclusion of World War II. By 1973, it had reached about 10 billion barrels a year, three-fourths of which was consumed in the capitalist countries.

The oil was obtained cheap. Hardly a dollar a barrel went to the producing countries. Between 1946 and 1970, the capitalist countries imported 100 billion barrels of oil from the Third World which had been at the very foundation of post-war reconstruction and prosperity. Yet payment to the exporting countries was equivalent to substantially less than 1% of the monetised labour time expended in the capitalist countries (it amounts to roughly 3% today).

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\*South Africa presents simultaneously the aspect of a capitalist and a Third World country. In many ways it exemplifies in one place much of the dynamic in the capitalist economy. Besides the expansionist settlement of whites, one can observe large differences in wages, restrictions on labour mobility for non-whites, the connections between the monetised labour-time of some non-whites to the non-monetised labour-time put in by their families in the "preserves" and needed for subsistence because the wages are too low. For descriptions of the system see for instance reference 9.

Cheap resources and a heavy concentration of investment produced rapidly growing exports particularly from West Germany and Japan. The exchange rates fixed in 1946 by the International Monetary Fund not only effectively froze the vast differences in wages between the capitalist and Third World countries. The exchange rates of the capitalist countries with respect to the dollar made wages in Europe and Japan considerably lower than those in the United States. That and the existence of an urban-industrial infrastructure made it profitable for corporations to invest in manufacturing in Europe and Japan for export to the United States. U.S. based multinational corporations were prominent among the investors.

By the mid-1960s, European and Japanese exports had become major contenders for the domestic U.S. market, at a time when that market was rapidly becoming saturated for many commodities (soon to be followed by Europe itself).

In the same periods wage rates in Europe and Japan had increased substantially. There was substantial upward pressure on the exchange rate of Japanese yen and West German marks. Many Third World countries had acquired industrial infrastructure of roads, power, etc. (much of it financed by the World Bank) which made the prospect of short term profits from industrial investment seem more real to multinational corporations.\* It had also become evident to them that political

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\*For a critique of this process of "development" see Bello et al's recent analysis of the Philippines.<sup>10/</sup>

independence had not enabled Third World countries to increase wage rates relative to the capitalist countries. Therefore, at a time when the competition for the markets in the capitalist countries was beginning to intensify greatly with wages still rising, the multinational corporations began massive shifts of portions of manufacturing to the Third World. This shift was most marked with respect to Third World countries where repressive governments guaranteed profit repatriation, tax "holidays", etc. as well as the continuation of low wages, if necessary by military force.

The process of urbanization and industrialization in the Third World did not improve the living conditions of the people of the Third World any more than these things had done so for Europe in the seventeenth and eighteenth centuries. But it did increase monetised energy consumption, as had also been the case in Europe.\* In most Third World countries this meant oil. In some, it was supplemented by hydropower and in a few cases by coal. In monetised transportation, oil came to occupy a central place. This was so both as regards the transport of agricultural and other raw materials to ports for export (as had often been done by coal powered railways in pre-World War II

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\*The two major growth industries during the seventeenth and eighteenth centuries in England were armaments and coal.<sup>11/</sup> The growth of the latter was largely due to the need for cooking and heating fuel of the growing urban population -- akin to the situation with regard to monetised fuelwood and kerosene in Third World cities today.

days), or for transport of food and other essentials to the cities.

Two other factors during 1965-73 laid the basis for the sudden onset of crisis in the early 1970's. First the U.S. government decided to make a major military test of its policy of "containment", as spelled out in 1950 National Security Council memorandum number 68 (NSC - 68).\* Simultaneously and related to the domestic opposition to the war on Viet Nam, Blacks and other oppressed communities as well as women demanded equality; environmentalists demanded an end to the despoilation of the environment.

Hard-pressed governments generally attempt to alleviate such crisis by printing money. For instance, the "crusade" of 1204 aggravated the internal troubles of the Byzantine empire and left it "permenantly disabled". The Byzantine rulers debased their gold hyperperons to try and overcome their financial difficulties. As a result, the hyperperons "lost all stability and went rapidly downhill."<sup>13/</sup> Similarly, in the time after the great plague in Europe (1346-53) which presaged capitalism, there were fewer workers and wages rose. (See graph in Chapter 4.)

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\*NSC - 68, written by Paul Nitze, and approved by President Truman, articulated basic U.S. post-war policy: "Fostering a world environment in which the American system can flourish...embraces two subsidiary policies. One is...a policy of attempting to develop a healthy international community. The other is the policy of "containing" the Soviet system. These two policies are closely interrelated and interact on one another."<sup>12/</sup>

Vilar has noted of the period:

"The spontaneous reaction of great and small states alike was to increase the supply of small coin, debase good coin, and modify the relation between token money and real money... [T]he general economic crisis produced internal monetary crises with extremely interesting social manifestations -- urban revolts."<sup>14</sup>

In like spirit, President Johnson announced that the U.S. would simultaneously spend tens of billions of dollars on the war and increase spending on domestic programs which would collectively result in the "Great Society".

The dollar was, of course, not a mere token money of a single state, the issues of which caused inflation in a single country. It was the currency on which international trade in the capitalist economy depended. Already during the 1950s, the trade deficits of the U.S. and issues of the U.S. dollar, combined with and the growing exports of West Germany and Japan had caused some exchange of dollars for gold. This trend was intensified in the 1960s. By the end of that decade, the policy of inflationary issues of currency and internationally rising prices were squarely in conflict with the U.S. promise to redeem paper dollars at \$35 an ounce of gold -- a commitment which was at the foundation of the post-World War II monetary system. That system, arrived at after formal discussions between the capitalist powers at Bretton Woods in 1944, was in many ways similar to

the de facto arrangement which prevailed during the nineteenth century, with the U.S. taking the place of Britain. The paper currency of a single state was not only the principal instrument of international trade. All other currencies in the capitalist economy were expressed and fixed in terms of the U.S. dollar, which was the only currency to be fixed in terms of gold -- \$35 an ounce regardless of the conditions of gold production in the world.

The economic events described above inexorably led to a drain of gold from the U.S.. In 1950 the U.S. government gold stock covered 64% of the monetary stock of about \$38 billion. By 1970 this had declined to 15.5% of a money stock of \$68.1 billion.<sup>15/</sup>

The express intention of the U.S. government to continue its inflationary policies inevitably caused international holders to exchange dollars for gold. Again, let us remember that we are not speaking here of the dollar in its role as token money internal to a country. Individual countries' currencies have depreciated much faster and do so today. We are concerned here with the role of the dollar as the ultimate repository of value in international transactions and for balancing international accounts. There has never been such rapid depreciation of the basic money of international trade. Even in the sixteenth century heyday of the influx of gold and silver into Europe from Central and South America, prices in terms of gold and silver

doubled every fifty years -- an average annual rate of inflation of under 1½%.

Rather than change its policies in the face of the drain of gold, the U.S. government unilaterally renounced its obligation to redeem dollars for gold.<sup>16/</sup> All the currencies in the capitalist economy became reduced to mere paper and magnetic blips in computer memories. The currencies ceased to be officially convertible into any commodity.

For the first time in history almost all international trade (save that which was by barter agreements) was carried on with token money not backed by any commodity. Moreover, each of these token monies was the currency issued by a single state and, therefore, subject to depreciation by its decisions.\*

The other unprecedented event followed soon after: the dramatic rise in the price of oil.\*\* It was the first time that a group of Third World countries had got some control over the price of an important commodity.

Though it was the Arab-Israeli war that signaled the rise in prices, the central military event in 1973 was the with-

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\*The "Special Drawing Right" (SDR) issued by the International Monetary Fund is merely a weighted average of five of these currencies -- the U.S. dollar, the British pound, the French franc, the West German mark and the Japanese yen. It is, therefore, also subject to depreciation as the single currencies themselves are. It only insulates holders against relative fluctuations.

\*\*A slow rise had begun in 1969, after more than two decades of falling prices (after discounting for inflation).<sup>17/</sup>

drawal of U.S. troops from Viet Nam because of the resistance of the Vietnamese people and the anti-war movement in the U.S.. Further, it was the political independence which almost all the Third World had gained by the mid-sixties which created the political climate in which such a rise in prices was possible. There were also other, more unique, factors. The essential conflicts among the oil consuming countries arising from their varying degrees of dependence on oil, the very central nature of oil to the capitalist countries internal structure were among the main economic reasons for OPEC's success in raising oil prices.

At the beginning of 1974, the world was therefore in a triply unprecedented situation:

- \*there was no commodity backed money even for international trade;
- \*the token monies with which international trade was being carried on were depreciating rapidly;
- \*a group of Third World countries had succeeded in gaining substantial control over the price of a commodity important to the capitalist countries.

Since the U.S. dollar and all other currencies had been reduced to mere paper, one might expect that the holders of this paper would dump it in favor of some commodity such as gold. This did happen to some extent and the price of gold increased with that of oil (in dollar terms). In fact, the

price of an ounce of gold has stayed between 10 and 20 times the price of a barrel of Middle Eastern crude oil since 1974. In spite of this, the demand for dollars and for the currencies of most other capitalist countries did not decline. On the contrary, it increased. The dollar continued to be the main currency of international trade and for the settlement of international accounts. This circumstance is central to understanding the monetary crisis today and its relation to oil prices.

One reason for the continued dominance of the dollar in the capitalist economy was that U.S. based corporations continued to control immense resources -- including vast resources in the Third World such as land, mines, factories, markets --- made very profitable in part because of the low wages. Any holder of dollars could continue to indirectly command these resources, so long as there was no fear that the U.S. government would freeze or otherwise negate the claims of foreign holders of U. S. currency or of property located in the U.S..

Next, there was no immediate alternative to the dollar and (secondarily) the currencies of other capitalist countries. The Kuwaiti finance minister suggested in 1973 that an oil based currency be created. But it was not. In monetary terms, most of the trade of Third World countries, including the oil exporters, is with the capitalist countries; most of the trade of the capitalist countries is with each other and for the pur-

chase of oil. So when the U.S. suspended gold convertibility, the only alternative at hand was a mix of capitalist country currencies. This could not solve the essential problem of unsecured international money, though it could serve to insulate holders against relative fluctuations in the exchange rates of the currencies of which it was composed. Such a currency was issued -- the SDR -- and the U.S. dollar automatically had a big role in it.

Finally, the continued international demand for the dollar was underpinned by the insistence of OPEC that dollars be used for the purchase of oil.\* This has been in part because of the lack of a readily available alternative, as discussed above. OPEC insistence on the dollar was primarily at the instance of Iran (until 1979) and Saudi Arabia. At the time of the first large increases in oil prices, these two countries accounted for about half of OPEC oil exports and they had a decisive say in this matter. In effect, the oil reserves of OPEC replaced the gold in Fort Knox as the main commodity behind the paper dollar.

The demonstration of that monetary reality came with the Iranian revolution. As soon as it was clear that the U.S. had lost control of Iranian resources, the price of oil doubled. There was no significant shortage of oil even temporarily, if

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\*Some purchases of oil have been made in other currencies, such as the British pound, and through barter arrangements, but these are exceptions. The dollar is the main currency that OPEC demands for its oil.

indeed there was any shortage at all. But the oil reserves of Iran had been removed from the support of the dollar. That is to say, one could no longer be sure of getting Iranian oil in exchange for dollars. The appreciation of this has been only partly direct, as is usual in such situations. For the most part, it has come through political, diplomatic and military events such as the departure of the Shah from Iran, President Carter's invitation to him to come to the U.S., and the subsequent political and military crisis that came to be known as the 'hostage crisis'. These events symbolized the economic reality, much as paper money itself does. But the grasp of monetary reality was none the less correct for having come through such symbolic events -- it found its expression in higher oil prices.

The United States government has, in effect, been in the position of being able to merely print money to purchase oil.<sup>18/</sup> However, it did not directly purchase oil with printed money. Rather, the increases in dollars came in the form of rapidly rising domestic credit and federal government deficits which were then expressed in part as higher expenditures for energy, including imported oil. In fact the cumulative U.S. government deficit, including the "off-budget" deficit,<sup>19/</sup> during 1974-79 was approximately equal to the increased expenditures on oil and natural gas in the U.S., both domestic and foreign. (See Table 6.)

Table 6

Cumulative Statistics for the U.S. -- 1974 - 1979

	<u>Billion U.S. \$</u>
1. Federal deficit	
(a) budget deficit	260
(b) off-budget deficit <sup>1/</sup>	60
(c) total deficit	320
2. Additional payments for oil and natural gas <sup>2/</sup>	
(a) oil imports	140
(b) domestic crude	80
(c) domestic natural gas	120
(d) total	310
3. Balance of commodity trade	-110
4. Balance of "Services" trade	
(a) investment income	65
(b) other	65
(c) total	130
5. Errors and Omissions	50

Sources: The United States Statistical Abstract, 1981;  
Balance of Payment Statistics, Part 2 1981, The International Monetary Fund.

Notes:

1. Rough estimate
2. The additional payments for domestic oil and gas are approximate estimates derived from the assumption of an average increase in domestic crude prices of \$4 per barrel (since part of the domestic crude prices were controlled during this period) and about \$1 per 1,000 cubic feet for natural gas (for the same reason).

The inflation in the U.S. made it appear that wages and other income were rising fast, when the rate of increase was actually slowing and had become negative by 1979.<sup>20/</sup> The main consequences were rapidly increasing prices internationally and the further relative cheapening of labour in many Third World countries, where real wages had begun to decline. (This further relative deterioration was also partly due to the dramatic rise in international grain prices in 1972-73.)

The other capitalist countries inflated export prices as well and thus obtained, through their convertible currencies, the increased amounts of dollars required for oil purchases. Note the astronomical growth of "Eurodollars" -- i.e. the dollars outside the jurisdiction of the U.S. Treasury -- in the last decade. The domestic inflation in the capitalist countries, however, depended on relative exchange rate fluctuations. These expressed the positions of capitalist countries relative to others. In general, the changes tended to further strengthen the positions of the relatively strong particularly in exports -- i.e. West Germany and Japan, which also had lower rates of inflation internally.

At the same time, the capitalist countries began to increase exports, at these rapidly rising prices, to the oil exporting countries. Since the higher prices applied to all exports (though they tended to cancel each other out in the case of trade amongst capitalist countries), the revenues from oil

importing Third World countries were also immensely increased.

The decisive ability of the capitalist countries to raise the prices of their exports rapidly, and for the most part consistently, as well as the fact that their currencies were the monetary instruments of international trade were among the basic factors that enabled them to eliminate the deficits that would have otherwise been caused by the increase in oil prices. The same causes, plus borrowing at high interest rates put many Third World countries deep into debt in spite of increases in exports much larger than the increases in their oil import bills. (Cumulative data are shown above in Chapter 1, Table 2.)

There were several other factors involved in the absence of balance of payments deficits for the capitalist countries and the rapidly rising deficits of Third World countries. These factors also worked to put many oil exporting Third World countries accounts into deficit.

To meet the rising costs of imports, including oil, many of the oil importing Third World countries resorted to three measures, often at the instance of the International Monetary Fund and/or the World Bank:\*

\*borrowing on capital account to meet current deficits;

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\*A large number of internal World Bank and IMF documents which have been made public in the last few years reveal this pattern. See for instance the documents on Haiti<sup>21</sup>/<sub>22</sub>, Philippines,<sup>22</sup>/<sub>23</sub> and Jamaica.<sup>23</sup>/

\*increasing exports, particularly by "opening doors" to multinational corporations

\*squeezing domestic wages.

Each one of these factors reinforced the others and increased the flow of resources to the capitalist countries.

They sent Third World debt soaring. The repatriation of profits and interest payments increased rapidly. The officially reported cumulative repatriation of profits to the U.S. alone between 1974 and 1979 was \$65 billion -- almost half the additional U.S. payments for oil imports.\* (See Table 3 above.) This was actually only 56% of the total net investment income of U.S. based multinational corporations of \$116 billion.<sup>24/</sup> (The difference was reinvested abroad.) This total amounts to an average of about \$20 billion a year for the 1974-79 period, rising almost monotonously from \$15.5 billion in 1974 to \$32.5 billion in 1979. In contrast the total net investment income during 1965-73 averaged about \$7 billion per year, the repatriated sums being about half that amount. Repatriated profits continued to rise in the post-1979 period,<sup>25/</sup> in spite of the recession.

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\*In treating these questions at the level of aggregation of countries, we miss most of the internal effect, of course. The fact that almost half the oil import payments corresponded to profit repatriation does not indicate the regressive impact that inflation or oil price rises may have had within the capitalist countries.

There is another little noted and less understood factor that has made the current account balances of the capitalist countries look rosy. It is officially designated as "errors and omissions" or "asymmetry on account of services and private transfers." The "errors and omissions" have, since 1974, been consistently positive for the capitalist countries as a group and have grown to vast proportions. Since they have risen very rapidly since the oil price increases and since private transfers from the oil exporting countries to the capitalist countries have been large, the "implication ... is that the corresponding credits are not being picked up in the accounts of the industrial countries, the main recipients", according to the IMF.<sup>26/</sup> Similarly one may suspect that unreported repatriation of profits is likely to have increased during this period.

Table 7 shows the importance of "errors and omissions" in balance of payments accounts. The cumulative surplus from 1974 and 1982 for the capitalist countries due to these "errors and omissions" has been roughly \$200 billion, easily wiping out the small cumulative current account deficit of \$23 billion in the same period.\* Figure 2 shows a graph of the balance of

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\*This averages to about \$22 billion a year for the 1974-82 period, during which this item was positive every year. In contrast during 1970-73, it was negative for three years and positive for one, ranging from -\$5.1 billion to a maximum of \$3.4 billion.<sup>27/</sup>

Table 7

Balance of Payments on Current Account  
in billions of U.S. dollars

Country Group	Year	1973	1974	1975	1976	1977	1978	1979	1980	1981 <sup>1/</sup>	1982 <sup>1/</sup>
<b>1. Capitalist Countries</b>											
(a) current account balance	18	-14	18	-3	-6	30	-10	-45	-4	11	
(b) errors and omissions	-2	3	14	14	10	23	29	39	~40	~60	
(c) total	16	-11	32	11	4	53	19	-6	~36	~71	
<b>2. Major Third World oil exporters</b>											
(a) current account balance	7	68	35	40	31	3	70	115	71	25	
(b) errors and omissions	-	-	-1	1	2	-2	-6	-11	-10?	-10?	2/
(c) total	7	68	34	41	33	1	64	104	~61	~15	
<b>3. Other Third World oil exporters</b>											
(a) current account balance	-3	-5	-10	-8	-7	-8	-9	-11	-21	-23	
(b) errors and omissions <sup>3/</sup>	-	-5	-10	-8	-7	-8	-9	-11	-21	?	
(c) total	-3	-5	-10	-8	-7	-8	-9	-11	-21	-23	
<b>4. Oil importing Third World</b>											
(a) current account balance	-9	-32	-37	-24	-23	-31	-49	-73	-81	-74	
(b) errors and omissions <sup>4/</sup>	-	-2	-4	-4	-3	-1	-	-	?	?	
(c) total	-9	-34	-41	-28	-26	-32	-49	-73	~81	~74	

Notes for Table 7

Sources: Balance of Payments Statistics Yearbook, vol. 32, Part 2, International Monetary Fund (Washington, D.C., 1981);  
World Economic Outlook, International Monetary Fund (Washington, D.C., 1982)

1. There are no data for the separate categories of countries for errors and omissions for 1981 and 1982 due to a change in method of presentation by the IMF. The numbers shown for errors and omissions for capitalist countries are from Table 23 of World Economic Outlook and attributed entirely to the capitalist countries.
2. Assumed to be about the same as for 1980.
3. There are no separate data for errors and omissions for the category "other Third World oil exporters". These are, however, probably not so large as to qualitatively change the results.
4. The errors and omissions shown include all Third World countries except the major oil exporters.

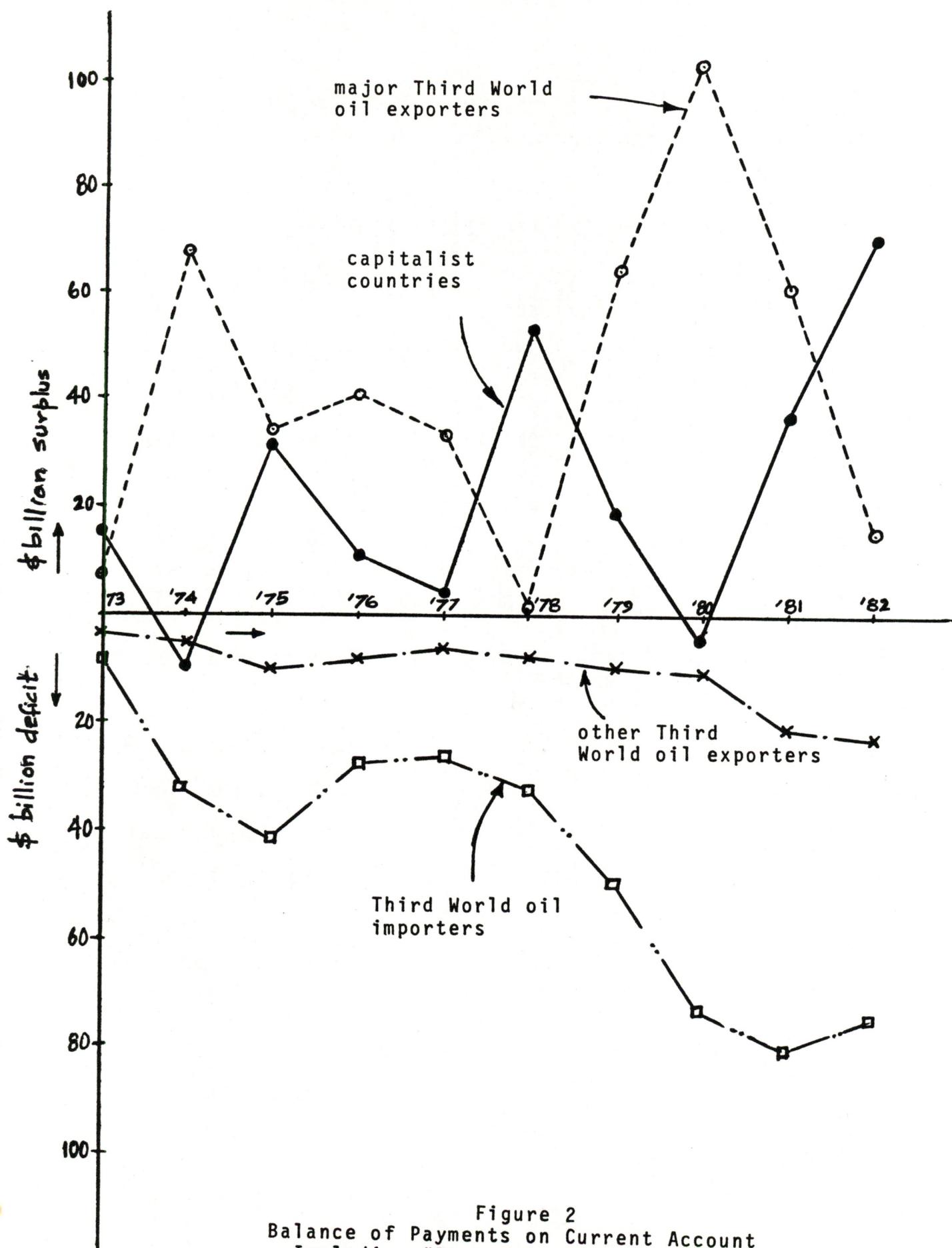


Figure 2  
Balance of Payments on Current Account  
Including "Errors and Omissions"

payments on current account including "errors and omissions". It is clear that these unreported transactions, many of which may have been illegal and corrupt, have resulted in an enormous drain from the Third World to the capitalist countries. In particular, they have been a principal cause of the mounting deficits of some oil exporting countries.

While the policies of the capitalist countries solved the temporary balance of payments problems, they were also the basis for the larger crisis after 1979. First, the further cheapening of labour in the Third World and the increasingly harsh measures which collaborating Third World governments took to keep wages down, encouraged multinational corporations to set up as well as to transfer manufacturing from the capitalist to the Third World countries. I have already cited the export processing zone, etc. and shown data on relative wages. This laid the basis for unemployment in several industries in the capitalist countries without contributing to the solution of unemployment in the Third World. Indeed, by setting up capital intensive industries to compete in the domestic markets in the Third World with weaker, though more labour-intensive domestic industries, they often exacerbated unemployment in the Third World. Rising military spending and rising repression in the Third World were a concomitant of this policy.

The imports by the capitalist countries from the Third World cause an immense drain of real resources from the Third

World, both directly and indirectly. Directly, the drain is due to the miserable level of wages. Indirectly, it is the loss of agricultural land, the destruction of small domestic industries, pollution, etc. Moreover, the monetised sector becomes primarily geared to external requirements and thus has little or no resilience. Any decline in export demand creates an immense crisis. For example, as Bello notes, hardly had the "export platforms" been erected in the Philippines than the 1979 crisis came and "choked off growth in the export markets of the advanced industrial countries." As a result, in 1979 "close to 340,000 Filipino workers were laid off; the layoffs increased by 100,000 in 1980 and by 300,000 in 1981..."<sup>28/</sup>

It is difficult to arrive at accurate estimates of the amount of labour-time involved in Third World exports for several reasons. First, the indirect effects are immense, since they involve displacement of large numbers of tribal peoples and peasants from their lands -- as for instance in dam building or commercial forestry. The internal economic dislocations caused by the competition between corporate giants and small domestic companies are another indirect cost that is difficult to quantify. Even the direct labour-time is difficult to assess -- since it would require detailed case by case study in contrast to the straight forward aggregate procedure discussed above for the capitalist countries. This is because the price of industrial plant, etc. is not determined by local wages and prices in

the capitalist countries. Further, if the investment is controlled by non-resident capitalists such as multinational corporations, they tend to depreciate it very quickly as a hedge against changes in laws, etc. that might make their operations less profitable. Rapid depreciation of capital equipment whose prices are not locally set but rather correspond to prices in the capitalist countries, often is a big part of the price of the exported commodity. Finally, with splintered manufacturing, a large proportion of the raw materials and parts are imported, some from capitalist others from Third World countries. For instance, Bello and others have noted that "for every dollar's worth of garment exports, the Philippines' net foreign exchange earnings came to only 44 cents. The situation was even worse in the electronics industry, where net foreign exchange earnings for every dollar's worth of exports came to only 13 cents."<sup>30/</sup>

Since international prices are primarily determined by the wages and profits in the capitalist countries, and since most labour-time in these countries is monetised, the flow of labour-time from them to the Third World is relatively simple to assess. Even after the large increases in oil prices, the exports of the capitalist countries to the Third World countries including the oil exporting countries, embody less than five per cent of the monetised labour-time expended in the

capitalist countries.\* These exports plus the repatriation profits, "errors and omissions", etc. more than pay for all the imports, including oil imports, from the Third World.

Shifting manufacturing to low wage areas has been primarily for the sake of profit and not for generating employment or meeting human needs. In fact, a consistent pursuance of such a direction is bound to result in insufficient demand because of the low wages. It is also at the root of the unemployment crisis.

If we refer to the pattern of work, including non-monetised work, in the capitalist economy, and compare it to the number of workers in multinational corporate factories, we can see that rising unemployment is a structural result. Of a population of 2.1 billion in the Third World, the monetised work-force (corresponding to the category "economically active population") is about 700 million. About as many people are probably engaged in non-monetised work such as fuel gathering, animal husbandry, home crop processing, house construction, etc. The unemployment and underemployment in the monetised sector is very large -- probably 10 per cent or more, though

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\*The exports of the capitalist countries to the Third World in 1980 were about \$300 billion. The average money value of gross product per worker was about \$10/hour of monetised labour-time. We neglect the contribution of the labour-time in Third World countries to this since this is monetised at much lower wages. The labour-time embodied in the exports is therefore about 30 billion hours, or about 4% of the monetised labour-time expended in the capitalist countries.

difficulties of method and measurement make it difficult to arrive at one figure.<sup>31/</sup> In addition, many of the people engaged in non-monetised work would probably flow into the monetised sector were monetised work available. This constitutes a reserve of several hundred million people in the Third World who could be employed for wage work.

In stark contrast, the total number of workers in multinational factories in the Third World is a few million, with on the order of a million in "export processing zones."\* Thus even if one ignores the negative effects of displacing local, smaller scale manufactures, the employment effect of multinational corporate investment in the Third World is negligible compared to the magnitude of the problem. Its net effect including indirect displacement of other workers may well be much smaller or even negative.

At the same time the export of industry across borders to take advantage of low wage rates does produce significant effects in the capitalist countries where about 30% of the monetised work-force is in mining, quarrying and manufacturing and where a larger proportion of the work is monetised.

The resulting situation is familiar and I will not go into it in any detail here. Suffice it to say, that the recession effects all parts of the capitalist economy simultaneously. The

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\*It is difficult to find complete data on this subject. A good discussion can be found in reference 32. The number of workers involved in exports is very much larger, since many or most exports originate partly in non-multinational corporate enterprises.

oil (Argentina) and the other two are oil importers (Brazil, Chile).

Thus, the growth of the monetised sectors in Third World countries has not resulted either in increased levels of employment nor in satisfaction of human needs. As discussed above, the forced existence of low wages in the Third World has laid the basis for generalised unemployment and the existence of vast amounts of unused industrial and agricultural capacity in the capitalist economy.

exports to the Third World from the capitalist countries, including those to most oil exporting countries, are now declining for lack of purchasing power and foreign exchange. Exports from the Third World including those based on ill-paid labour are declining because of lack of purchasing power in the capitalist countries. Finally, as is usual in such situations, the terms of trade for the Third World countries are worsening rapidly. Excluding oil, prices of Third World exports have fallen by 30% since 1979.<sup>33/</sup> At the same time, the prices of exports from the capitalist countries continue to rise.

The rapid increases in debts on capital account to meet current requirements has inevitably had the result that a larger and larger proportion of export earnings are devoted to debt service. Among the most heavily indebted Third World countries with the most serious problems are those which followed the "export led growth strategy" advocated by the World Bank and the IMF. According to Penelope Hartland-Thunberg of the Center for Strategic International Studies in Washington:

"As of mid-1982 there were nine LDCs whose estimated interest and principal payments as a per cent of expected 1982 foreign exchange receipts amount to 90 per cent or more -- and for Argentina, Mexico, Ecuador, Brazil and Chile, the ratios were all above 100 per cent..."<sup>34/</sup>

Note that of the five countries named above, two are oil exporters (Mexico, Ecuador), one is about self-sufficient in

## Chapter 6

### Restructuring the International Monetary System

The long term external debt of the Third World countries excluding the major oil exporters is now over \$500 billion.<sup>35/</sup> Under this heavy burden of debt plus short term obligations, more and more Third World countries are unable to pay even the interest on foreign debt let alone the principal. Total governmental "debts rescheduled in 1979 amounted to \$4.9 billion, in 1980 to \$4.5 billion; in 1981 to 10.8 billion and in the first half of 1982 to \$27.9 billion."<sup>36/</sup> The figure of \$27.9 billion for the first half of 1982 does not include the massive "rescheduling" of the Mexican government debt that began in July, 1982. Further, these figures are only the "rescheduling" of debt that fell due in that particular year. Finally, they do not include private debt "rescheduling".

The International Monetary Fund, many capitalist country

governments as well as many multinational corporations are pursuing policies that will, by and large, aggravate the underlying causes of the unemployment and debt crises. Massive loans on capital account to meet current deficits and the IMF's "conditionalities" on the loans force the borrowing countries to further relinquish controls over exchange rates and profit repatriation and to accept even more multinational corporate investment. While the loans put off the day of reckoning, they will make for bigger defaults and a more massive crisis. Borrowing on capital account to meet current deficits is like tearing down the timbers of one's house to feed the fireplace. Accepting the "conditions" that are attached to the loans is like throwing one's clothes in too! The IMF "belt tightening" which is being demanded of those who are already hungry will only further aggravate all aspects of the crisis. In the 1960's and 1970's, it did not generate a rapidly increasing unemployment in the capitalist countries because it increased exports particularly of investment commodities from the capitalist countries to the Third World. Today, with the enormous overcapacity in the capitalist economy, with the loans being used primarily for debt service and armaments purchases this cannot happen. The only sector that is humming is that of the production of the weapons of mass destruction, contributing to tensions and disaster of another kind.

The direction which comes from the historical experience of the capitalist countries is to shift the problems out of their boundaries into the Third World. Today the problem has come full circle. The vast differences in wages are creating unemployment, overcapacity and depression in the capitalist countries. These are bringing with them the reduction of workers wages, bankruptcies, the squeezing of small business, the farm crisis, and unemployment.

Given the massive drain of resources from the Third World to the capitalist countries, it might be argued that a collapse of the international monetary and trading system might help the people of the Third World. This would be a cynical theoretical argument which is without reference to the military and economic reality in the world. First, it would seriously disrupt the lives of hundreds of millions of people in the capitalist countries and perhaps even cause total internal collapses and famines. Second, such catastrophes would drive the world toward ever widening military conflicts -- if experience is any guide.

Military tensions are already high. There are already many devastating wars going on, some with the potential of triggering global nuclear holocaust. Abstract economic arguments that do not refer to these economic and military realities cannot provide the direction for a solution.

Based on the theoretical and practical considerations discussed in this essay, I propose some basic principles for the

restructuring of the international monetary system. This would be one essential element in helping redress the problems of unemployment and inequity. It is a proposal that recognizes the reality of the political independence of the Third World and seeks to help establish this reality in the monetary system, in contrast to use of that system to subvert it, a direction which can now be clearly seen to be disastrous even for the people of the capitalist countries.

The international monetary crisis has given rise to a number of proposals for change in the monetary system. These range from minor reforms and relaxation of IMF "conditionalities"<sup>37/</sup> to a restructuring of the monetary system based on the creation of a new international currency to be issued by a "World Central Bank".<sup>38/</sup> The latter proposals are essentially variations of Keynes' proposal at Bretton Woods in 1944. Barnet has noted that Keynes was for a monetary system "built around a central bank much less subject to American control than the present IMF and World Bank and with far greater resources and...for a truly international currency instead of the dollar."<sup>39/</sup>

However, all of the proposals which I have seen are based on the principle that the parities of currencies should be driven primarily by balance of payments considerations. In a world in which the internal economic conditions in countries were about the same and determined primarily by internal considerations this may be a satisfactory system. However, as we have seen, quite

the opposite is true in the capitalist economy. Wage differences between the capitalist and Third World countries have been rising for almost two hundred years and have assumed vast proportions. The internal conditions in the capitalist countries, including the consumption of large amounts of resources, have been premised upon external expansion -- and that expansion in turn is a dominant factor in the internal conditions in Third World countries. Finally, the internal composition of the work force in the monetised sector as well as the division of labour-time between the monetised and non-monetised sectors are vastly and qualitatively different between countries, with the primary differences again being between the capitalist and Third World countries. Under these conditions a system of exchange rates driven primarily by balance of payments conditions will inexorably reproduce and aggravate the inequalities in the system, increase the debt of the Third World and aggravate unemployment everywhere.

Put another way, the balance of payments cannot continue to be a basic criterion for exchange rates in a system in which international prices are determined primarily by the conditions of production and consumption in the capitalist countries which comprise a minority of the population of the capitalist countries. Even in the case of oil where some unique economic and military factors enabled the exporting countries of the Third World to determine prices, the balance of payments advantage was seen in

most cases to be temporary and has vanished altogether in the aggregate (see Table 7 and Figure 2 above). Moreover, the real price of oil has been declining for 3 years and quite rapidly for the past year. Four factors are fundamental to understanding this rapid erosion of the control of the price of oil:

- \*the importers of oil are mainly the capitalist countries;
- \*the prices of the imports of Third World countries are determined primarily by the capitalist countries;
- \*the currencies of international trade are the domestic currencies of the capitalist countries;
- \*the price of oil is not substantially determined by a cost structure, particularly wages, that would provide it with considerable built-in resistance to downward pressure based on internal factors.

The analysis in this essay leads me to conclude that a stable system that would not be inherently prone to debt and unemployment crises but rather promote employment and the satisfaction of human needs must address the fundamental causes of the present predicament insofar as a monetary system can. One basic principle of such an international monetary system would be that the exchange rates of currencies be determined by the relative prices of wage goods in each country. Balance of payments problems should be dealt with by means other than change of currency parities.

Any basic restructuring of the international monetary system, including one based on the above principle, which I will call the "wage goods parity principle", will require the establishment of a world control bank and the issue of a new truly international currency based upon a fresh agreement between countries. A system based on the wage goods parity principle would mean that the exchange rate of a country's currency with respect to the international currency would be automatically adjusted in such a way that the purchasing power of the international currency with respect to wage goods in each country would remain constant. That is, the parities of the currencies of countries with respect to one another would be such that the price of a basic unit of wage goods would be the same and remain so in all participating countries.

Any proposal for a restructuring of the monetary system inevitably raises a number of political and technical questions, as does this one. I will only address a few of them that directly concern the analysis in this essay and leave out questions such as the amounts of the international currency to be issued, voting and decision-making in the new bank, etc.

The most obvious technical and economic question that confronts the proposal is that of the composition of the composite of wage goods which should be used to set the parity of a country's currency with respect to the international currency, and hence to all others. Our discussion so far indicates what it

should not be: the existing mix of wage goods actually purchased in various countries. In most Third World countries, the purchases that most people make are heavily conditioned by poverty. They are therefore dominated by food which is often enough not sufficient as it is. The needs for housing, fuel, clothing, health care, etc. usually must be met as circumstances allow and usually they cannot be satisfactorily met. In some cases, the cost per unit of utility may be much higher because of a buyers' poverty -- as is the case with kerosene for lighting (see Chapter 2). In general, the composite should take into account differences in local conditions, such as climate and custom, without endorsing or incorporating into it the structure of inequality that exists in the capitalist economy. In brief, it must correspond to human needs.

Given the vast inequalities and substantial differences in conditions, I do not think that a satisfactory mix of wage goods could easily be found or agreed upon. Rather, I am of the opinion that the price of a single commodity which is sufficiently complex as to be a composite of wage goods and as to correspond to human needs would serve the purpose at hand. A full meal in a clean, modest restaurant in a small or medium size town could, for instance, be such a commodity. It includes in it the prices of food, the wages of workers, the cost of floor space and of utilities such as water, cooking fuel and lighting. Since a full meal can be defined according to nutritional value,

it can take into account differences in custom without endorsing the patterns of consumption dictated by poverty.

In basing an international monetary system on such a principle we automatically achieve a number of desirable effects.

For instance,

- \*the monetary system becomes relatively independent of the composition of commodities that are traded;
- \*the price of a single commodity such as gold, and by implication the conditions of its pricing and production, cannot affect the international monetary system;
- \*member countries would be free to follow internal monetary policies according to their lights but holders of the international currency would be automatically protected against erosion of its purchasing power (with respect to wage goods).

Since balance of payments deficits or surpluses would not affect the parities of currencies, other rules would have to be devised to address consistent deficits and surpluses. For instance, extreme cases of persistent deficits could result in trade with that country on a cash only basis. Similarly persistent surpluses could, for instance, result in requirements for import increases and export decreases and/or compulsory deposits of the international currency with the world central bank.

An international monetary system with exchange rates based on a composite price of wage goods would result in substantial

revaluations of the currencies of almost all Third World countries. The revaluations would tend to be greater in countries where wages are low because the price of wage goods tends to be low in these countries as well. The extent of the revaluation would depend, of course, on the composite of wage goods agreed upon as the common measure. This aspect of the monetary system would contribute enormously to a genuine solution to the debt and unemployment crises. For the oil importing Third World countries, substantial revaluations would:

- \*reduce the price of oil substantially;
- \*reduce the debt burden substantially;
- \*allow increased imports of essentials such as food as well as investment commodities;
- \*discourage exploitation of ill-paid labour;
- \*reverse the deterioration in the terms of trade with respect to the capitalist countries;
- \*encourage domestic agricultural and other investment to meet rising demands;
- \*increase employment as a result of the above.

Apart from the first item the same benefits would accrue to most oil exporting Third World countries.

The reduction of the debt burden and most import costs incurred by Third World countries would effectively prevent a

collapse of the international trading and monetary system by fundamentally restructuring it. This would benefit the holders of assets such as Eurodollars, among which are a number of oil exporting countries.

A prevention of the collapse of the monetary system would be of primary benefit to the people of the capitalist countries since it would prevent a collapse of the trading system which provides them with oil and other materials without which there could be famine or war or both. The purchasing power of capitalist countries currencies (and labour-time) with respect to Third World countries would decline. By the same token, investment, particularly in the hard hit depressed sectors, such as textiles, would tend to increase, since a primary cause of the depression in such sectors has been the shift of such manufacturing to "export processing zones", and the like, where ill-paid labour can easily be exploited. By redressing the long, forced relative decline of wages in the Third World, employment would be stimulated in both the capitalist and the Third World countries. Further, the revaluations would cause an increase in exports of food and capital goods to the Third World for some years -- with their concomitant effects to overcoming the crises in these sectors in the capitalist countries.

There will be many non-economic effects of such a system. For instance, the large differences in wages are a basic factor motivating workers in Third World countries to leave their homes

in search of jobs and wages which could buy two square meals a day. By raising relative wages in the Third World, the causes of these emigration pressures would be substantially addressed.

The one sector that would be adversely affected would be those corporations which depend on ill paid labour in the Third World to make commodities primarily for export. Since the vast difference in wages has been a basic driving force of the crisis, a reduction of that difference is essential to any resolution. These corporations perhaps would like to see the difference reduced by lowering wages in the capitalist countries -- and signs abound that many do see it that way. In contrast, the approach advocated here would redress the inequalities genuinely and from the point of view of meeting human needs.

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## Chapter 7

### Summary and Conclusions

Rising oil prices are not the fundamental reason for the large current account balance of payments deficits incurred by the oil importing Third World countries, taken together, though they have contributed substantially to them. Still less are they the most powerful or basic cause of the crushing debt burden of many Third World countries, which notably affects several oil exporters as well, or of the severe unemployment which affects the entire capitalist economy.\*

The oil import bill of the importing Third World countries went from \$5 billion in 1973 to about \$67 billion in 1982, but their exports increased vastly more -- from \$72 billion in 1973

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\*The term capitalist economy refers to the capitalist countries and Third World countries taken together -- i.e., it is the aggregate of the countries described as "market economies" in United Nations' nomenclature.

to \$267 billion in 1982. This increase of almost \$200 billion was more than three times the increase in oil import costs. Yet the deficits rose, accumulating to over \$400 billion during 1974-1982. In contrast, the capitalist countries as a group imported about 80% of the oil traded and had a cumulative oil import bill of \$1.5 trillion in the 1974-82. Yet their cumulative deficit in the period was only \$23 billion. Even this was much more than wiped out by the positive cumulative balance of about \$200 billion in "errors and omissions", which are basically unreported net transfers from the Third World (including the oil exporters) to the capitalist countries.

These cumulative figures clearly indicate that factors other than oil prices must account for the rising balance of payments deficits on current account and the debts of Third World countries and the absence of them for the capitalist countries. This investigation has led me to the conclusion that two closely related factors are at the root of the debt and unemployment crises which has been about two hundred years in the making. The first is the vast difference in wages between the capitalist and Third World countries; the second is the increasing mobility of capital, particularly through multinational corporations, reinforced by severe restrictions on the mobility of workers.

Of course the debt and unemployment crises have in large measure been concurrent with the increase in oil prices and the crisis in the monetary system. This essay attempts to explain

the reciprocal effects of higher oil prices to structural changes in the capitalist economy and hence to the questions of employment and human needs.

Such an investigation confronts basic problems of method in several areas. We must understand how to consistently relate

\*energy and labour-time;

\*various kinds of labour-time to each other, including monetised to non-monetised labour-time;

\*labour-time to money;

\*various kinds of money to each other.

Because of the large amount of non-monetised labour-time that is expended in the production of utility (washing clothes, sweeping and cooking, for instance), because of vast differences in wages for the same or similar work, and other reasons, we found it essential to add units of labour-time directly, and not through the proxy of money, in order to understand productivity of labour-time in relation to both commodities and utility. Further since any particular commodity is, in general, produced in more than one country, it is essential to consider the entire capitalist economy as a unit to discern certain structural aspects of the crisis.

The basic structure of the capitalist economy began to be laid in the early nineteenth century when wages began to rise in England and other parts of Europe. Concurrently they stagnated

or declined in the colonies due to the starvation conditions created by diversion of resources for exports and by the marketing of manufactures from the capitalist countries to the detriment of local goods and jobs. It is not yet recognised that the proportion of people in non-agricultural employment has stayed roughly the same in the capitalist economy for hundreds of years. While it increased in the capitalist countries, it declined in the colonies.

By the end of World War II the differences in wages in the capitalist economy had become immense. However, the Third World countries still mainly supplied raw materials and were important markets. By the mid-sixties a considerable number of them had an infrastructure (electricity, roads, etc.) which could easily be used by the multinational corporations for profits based on ill-paid labour. Since wages in Japan and Europe were catching up to the U.S., the trend was toward investment in the Third World, particularly in countries where repressive governments could guarantee continued cheap labour supply, profit repatriation, etc. In 1975, on a scale of U.S. = 100, the average hourly compensation in 34 manufacturing industries in the Third World ranged from 3 in Pakistan to 30 in Mexico. Concurrently with these developments, the U.S. was printing money to finance the war on Viet Nam as well as rising domestic expenditures. Since the U.S. dollar was the international reserve currency, exchangeable at a fixed rate of \$35 per ounce for gold,

there was a large and unsustainable gold drain. The U.S. suspended the gold convertibility of the dollar in 1971. This left the international monetary system without any official commodity backing.

The military factors of the U.S. withdrawal from Viet Nam and the Arab-Israeli war of 1973, the almost complete dependence of Europe and Japan on oil from the Third World, and the political independence of most of the Third World created the conditions in which OPEC could get substantial control of oil prices. It was the first time that a group of Third World countries had obtained such control over the price of a commodity. The U.S. and the other capitalist powers have, however, been in the position of printing money to pay for the imports -- this being done through devices such as increasing domestic credit and budget deficits. This is possible because the internal currencies of the capitalist countries are also the instruments of international trade. They have no intrinsic value whatsoever and are not backed by any commodity.

The printing of U.S. dollars to purchase resources abroad, has created an unprecedented inflation in the principal monetary instrument of international trade. The annual reduction in the purchasing power of the U.S. dollar was about 7% during the 1970s. The previous greatest inflation in the principal instrument of international trade had occurred during the sixteenth century influx of the gold of the Americas into Spain - it averaged only

1½% per year.

The debt crisis is essentially the result of the capitalist countries' ability to raise the prices of their exports consistently, in contrast to the Third World countries, and the unemployment crisis is the result of a combination of the attempt to reduce inflation (caused by printing money to import resources) by high interest rates and the shift of manufacturing by multinational corporations to low wage areas. The saturation of markets for many commodities in the capitalist countries is also an important factor. These crises were concomitant with the sudden increases in oil prices in 1974 and 1979 because of the suddenness and size of the actions which the capitalist countries took in eliminating their deficits and shifting them onto the Third World countries.

The basic cause of vast wage differences within the capitalist economy must be addressed if the debt and employment crises are to be dealt with structurally. The present system of exchange rate parities has the effect of reproducing and exacerbating the basic causes of the crisis. I have proposed that a system of parities based on the equivalence of the price of a composite of wage goods be the foundation of a restructured international monetary system and a new international currency. In such a system persistent balance of payments deficits or surpluses would be dealt with by means other than changes in currency parities. Such a system would go a considerable way to-

ward reducing the threat of a complete and catastrophic collapse of trade as a result of the monetary crisis and toward creating more investment and jobs everywhere.